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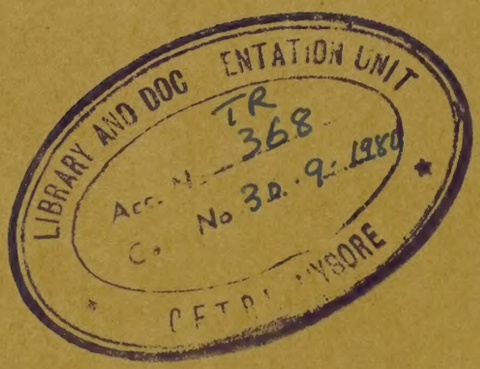
WORLD PRODUCTION AND TRADE IN FRESH GRAPEFRUIT



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Ministry of Overseas Development

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WORLD PRODUCTION AND TRADE IN FRESH GRAPEFRUIT

Jacqueline Stother

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6. The grapefruit industries of five countries (the United States, Israel, South Africa, Argentina and Cyprus) and the Caribbean area are discussed. Production is increasing in all areas apart from the Caribbean, where in general old and diseased trees are not being replaced. Grapefruit is grown principally for export as fresh fruit in relatively few countries: viz Israel, South Africa and Cyprus.

7. International trade in fresh grapefruit is discussed. Trade in fresh grapefruit has shown a strong upward trend since 1957. Exports recorded an increase of 120 per cent between 1957 and 1967, exceeding 334,000 tons in the latter year. Israel took over the position of major world exporter of grapefruit from the United States in 1964. Exports from South Africa and Cyprus have risen strongly, as have those from some minor producing countries, such as Spain and Dominica; however exports from Trinidad, Morocco and Jamaica, have declined. (see Table 1, page 14).

8. The export trade structures of and trends in exports from eleven countries (Israel, United States, South Africa, Cyprus, Trinidad, Morocco, Spain, Jamaica, Surinam, Brazil and Dominica) are discussed. A distinction is drawn between countries having national export organisations either State, or co-operatively-owned (Israel, South Africa, Morocco and most of the Caribbean countries) and those countries relying on private exporters (United States, Spain, Brazil and Cyprus).

9. The major import markets for fresh grapefruit are the United Kingdom, Canada, the member countries of the European Economic Community (EEC) and Switzerland. This is in marked contract to the pre-War situation when the United Kingdom and Canada were the only large importers of grapefruit. These two countries are still the major import markets, but imports into the EEC countries have increased very rapidly in recent years. Imports into the Scandinavian countries are of minor importance and show a slower rate of increase than imports into most other European countries.

10. The import situation in ten major markets (the United Kingdom, Canada, Germany, France, Netherlands, Belgium/Luxembourg, Switzerland, Italy and Scandinavia) is analysed on the basis of annual and monthly trade statistics. Most importing countries show a relatively low level of imports during the months June to October and a particularly low level in August, September and October.

11. Virtually all Canadian imports of grapefruit are supplied by the United States - also an important supplier to most continental European markets, especially France. The United Kingdom imports very limited quantities of grapefruit from the United States and relies largely on imports from Israel (the dominant supplier of European markets), Cyprus and South Africa. Among the minor suppliers; Mozambique, Swaziland and the West Indies also supply this market. The Honduras Republic is of importance as a supplier to the German, French and Dutch markets and the last named also receives substantial quantities of grapefruit from Surinam.

12. Quality and packaging requirements for international trade are assessed. The standards for imports into the EEC and the United States are set out in Appendices A and B. Grapefruit should have a well-coloured, unblemished skin and preferably a shelf-life of one month or more in the importing country. On the whole "desert" grapefruit meet these conditions better than do "tropical" grapefruit. European consumers prefer smaller grapefruit than North American consumers and this again creates problems for exporters of large tropical fruit.

13. Barriers to trade in the form of quotas, import tariffs, taxes and phyto-sanitary regulations are examined. Only the United Kingdom imposes quotas - on imports of grapefruit from the Dollar Area, with a complete prohibition of imports of fruit from the Dollar Area (other than Cuba) in October and November. Rates of import duty are moderate - ad valorem rates will be reduced to 6 per cent or less by 1972 and several countries will then grant free entry to grapefruit imports (see Table 3, page 53). Internal taxes levied on grapefruit range from nil in Switzerland and the United Kingdom to 14 per cent of gross landed value in Belgium; however these taxes are generally levied on all goods so that the price of grapefruit relative to other products is not affected.

14. Only the phyto-sanitary regulations of Italy and the United States are restrictive. However waivers to the Italian regulations may be applied for; fumigation of fruit may be necessary to comply with the strict American regulations.

15. In Part III the different market structures, demand patterns and price levels in the major world markets for grapefruit (United States, Canada, United Kingdom, Germany, France, Netherlands, Belgium, Switzerland, Italy and Scandinavia) are discussed.

16. Per capita consumption is highest in the United States and Canada where it has reached 9 lb per annum. In Europe however per capita consumption is much lower; the highest levels reached - in the United Kingdom and Switzerland, are less than 4 lb per capita. Nevertheless consumption in many European countries has increased very rapidly in recent years, for instance per capita consumption of grapefruit doubled between 1963 and 1968 in Germany and France to reach 2.8 lb and 2.4 lb per head, respectiv Consumption in Italy and the Scandinavian countries however is relatively low (below 1.5 lb per capita), although Italian consumption has risen very rapidly since 1964 from a very low base.

17. Average import values for grapefruit, over the six years 1963 to 1968 were calculated from the trade returns of Canada, the United Kingdom, Germany, France, Netherlands, Belgium/Luxembourg, Switzerland and Italy. There has been no overall trend in these values.

18. Monthly average wholesale price series were available for the United Kingdom and France, as was an average "on-tree" price series for the United States. The two wholesale price series show that prices are at their lowest during the winter and early spring months and rise during the summer months to a peak in September or October (this pattern was not followed in 1969 when there was a shortage of supplies during late spring and early summer). The American "on-tree" prices also follow this pattern on the whole, but frost damage to the crop sometimes causes prices to rise in early spring.

19. The traditional fruiterers shop still retains its importance as a retail outlet for grapefruit in the United Kingdom although in North America the independent retailer has been almost entirely supplanted by supermarkets and chain stores. In continental European countries, chain stores and supermarkets were instrumental in introducing grapefruit to consumers in the post-War period, and are probably the major outlets for grapefruit on these markets. Catering outlets appear to be of importance only in the United Kingdom.

20. Part IV of this report discusses estimates of future production, export availabilities and consumption of grapefruit for 1975. FAO estimates put production at 3,560,000 tons and export availabilities at about 900,000 tons in that year, while import demand (for Canada and Western European countries) was estimated at only 402,000 tons.

21. More recent information suggests that export availabilities in 1975 are unlikely to exceed 600,000 tons and projections of import demand for that year made by TPI total 492,400 tons.

22. Various other factors may reduce the discrepancy between export availability and import demand for grapefruit; for example United States crops may be reduced by frost damage and the East European countries may become regular buyers of grapefruit.

23. The above estimates for consumption have been made on an annual basis. However the level of imports during the months July to October is generally much lower than during the other months of the year, despite the fact that the warm weather during the summer and early autumn months might be expected to stimulate demand for grapefruit. In addition, wholesale prices in the United Kingdom and France are high during this period, which also suggests that larger quantities of grapefruit could be sold at this time, if they were available.

24. At present South Africa is the only large supplier of world markets during these months and the bulk of her crop is harvested by July. Thus most grapefruit on world markets in September and early October (before the commencement of the Northern Hemisphere season) has been cold-stored, apart from small quantities exported from Jamaica, Dominica and other Caribbean countries.

25. The present unsatisfied demand for fresh grapefruit during the months July to October is estimated at about 25,000 tons for Canada and the Western European countries together, of which 14,500 tons would be required in September and the first two weeks of October. On a less conservative basis unsatisfied demand in these countries may be estimated at 50,000 tons. Furthermore the United States might absorb 50,000 tons of imported fruit over the period June to September, if exporting countries could comply with her strict phyto-sanitary regulations.

26. The supply gap identified above may be affected by unforeseen factors; for example the problems of long-term cold-storage of grapefruit might be overcome, so that Israeli and even Florida grapefruit could be marketed over a much longer period, while South African supplies could be increased in September and early October.

27. An increase in supplies during September and October would almost certainly reduce prices to some extent, however the precise result is impossible to calculate. Good quality grapefruit would be expected to fetch a premium over cold-stored fruit.

28. It is concluded that providing a new suppliers' grapefruit can satisfy requirements of appearance, intrinsic quality, shelf-life and regularity of supply, it should find a good market in Canada, the United Kingdom and the EEC countries during the July to October period, when these markets appear to be under-supplied to the extent of some 25,000 tons. Although the United States also provides a large potential market from June to September, her phyto-sanitary regulations may prove prohibitive. The projected increase in demand for grapefruit during the period end-October to June will easily be met by projected increases in production in Israel, the United States, Cyprus and (to some extent) South Africa.

WORLD PRODUCTION AND TRADE IN FRESH GRAPEFRUIT

PART I - PRODUCTION

World Production

The grapefruit (Citrus paradisi Macfadyen) has been cultivated on a commercial scale only since the eighteen-eighties when the first orchards were established in Florida. Production was established in many other countries such as Jamaica, Trinidad, South Africa and Israel during the inter-war years, but the United States remained the dominant supplier, accounting for over 90 per cent of the world crop on average during this period. In the 1945/6 season US production exceeded 2,285,000 tons, a level which has never been attained since that time, because of severe frost damage in the winters of 1948/9 and 1950/1 which virtually destroyed the Texas citrus industry.

In spite of steadily increasing grapefruit production in other countries, the world crop did not exceed the record U.S. crop of 1945/6 until 1966/7. The ten seasons 1957/8 to 1966/7, saw a sixty per cent increase in production from 1,614,000 tons to 2,639,000 tons despite a set-back in the 1962/3 and 1963/4 seasons following further frost damage to the United States' crop. Production is estimated to have declined slightly in 1967/8 (to 2,234,000 tons), but estimated production for 1968/9 is 2,630,000 tons (See Table I in Appendix D). The upward trend in production is expected to continue as new plantings in the United States, Israel and Cyprus come into bearing and the FAO has estimated that production may reach 3,560,000 tons by 1975, representing a thirty-five per cent increase over the 1966/7 crop. (1)

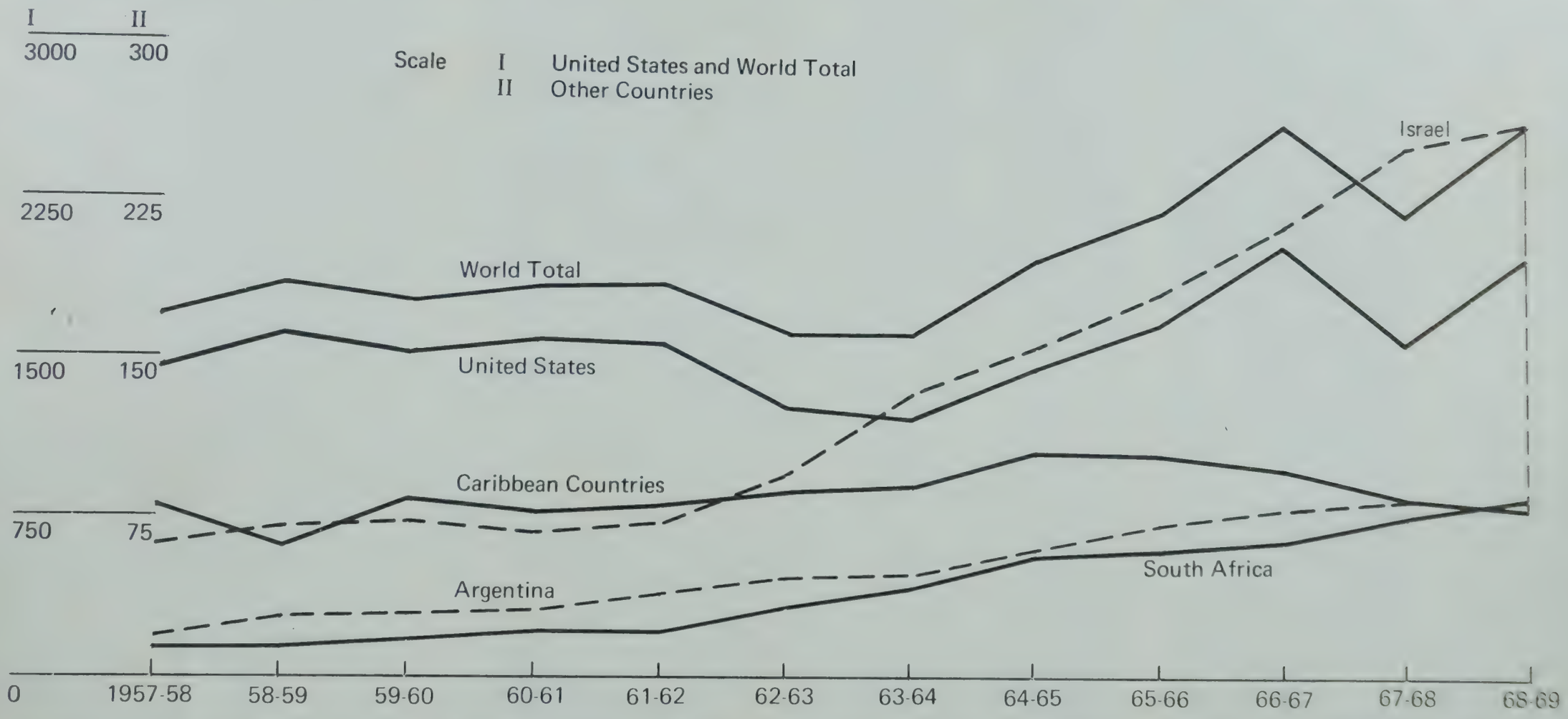
Figure 1 on page 2 demonstrates that in spite of repeated frost damage to the United States' crop (in the winters of 1957/8, 1962/3 and 1966/7), and rapid expansion of grapefruit production in other countries, the United States is still the dominant producer of grapefruit, accounting for 85 per cent or more of world production during the period 1957/8 to 1961/2 and for 78 per cent of world production, on average, from 1962/3 to 1966/7: in 1967/8 the United States' share of world production fell to 70 per cent. Israel, the world's second grapefruit producing country, accounted for only 8 per cent of world production in 1966/7 (11 per cent in 1967/8) or less than 11 per cent of the United States' crop in that year, in spite of a 250 per cent increase in the Israeli crop during the ten years 1957/8 to 1966/7.

Other major producing countries are the Republic of South Africa and Argentina: these countries' crops increased by 360 per cent and 300 per cent respectively during the ten years 1957 to 1966 and in the latter year their crops accounted for 3 and 4 per cent respectively of the world total. The Caribbean area as a whole is a significant supplier of grapefruit, but after a 38 per cent increase in production over the period 1957/8 to 1964/5 from 78,000 tons to 108,000 tons, production declined, being only 86,000 tons - 4 per cent of the world total in 1967/8 compared with 5 per cent of world production in 1957/8.

Figure 1

Grapefruit World production 1957-8 to 1968-9

Sources: See Table 1



Minor producers include Cyprus, Morocco, Spain and Algeria in the Mediterranean region; and in the Southern Hemisphere, Mozambique and Swaziland, Brazil and Australia. There is some production in Asia and New Zealand both of true grapefruit and also of grapefruit-like hybrids.

Since a large proportion of the world grapefruit crop is produced in the United States, where there is a large usage for processing, the proportion of grapefruit consumed in fresh form is much smaller than those of the other major citrus fruits such as oranges and lemons. In recent years about half the United States crop has gone to processing, while in some Caribbean countries, notably British Honduras, and Jamaica, a major proportion of grapefruit production is processed. However in most other producing countries grapefruit is grown for the fresh export trade or the domestic market and only the culls are processed.

The proportion of fresh grapefruit entering international trade is also small in comparison with oranges, for example, because of the dominance of the United States' grapefruit industry, which exports only a small percentage (between 5 and 10 per cent) of production in the fresh state. Production in Argentina, one of the major producers, is also almost entirely for domestic consumption. The countries producing grapefruit specifically for export as fresh fruit - namely Israel, South Africa and Cyprus - accounted for only 17 per cent of world production in 1967/8.

Commercial Varieties

Most varieties of grapefruit grown commercially originated in Florida, where the fruit was first successfully cultivated on a large scale. The grapefruit is unusual in that only two or three varieties are widely planted on a commercial scale and these varieties can be grown in all grapefruit producing areas, although their flavour and other characteristics vary according to the climatic conditions (this point will be pursued later).

Connoisseurs generally agree that the flavour of seedy grapefruit is stronger and more pronounced than that of the so-called seedless varieties. Since the former also mature earlier and exhibit better section stability in canning, many processors prefer the seedy fruits. The principal seedy grapefruit in commercial production is the Duncan which is described below:-

Duncan: Fruit large and oblate, from $3\frac{1}{2}$ to 5 inches (90mm to 125mm) in diameter. Skin colour pale to light yellow. Rind medium-thick and surface smooth and even. Flesh buff-coloured; tender, very juicy; flavour pronounced and excellent. Contains up to 50 seeds. Medium-early in maturity. (2)

Marsh Seedless

The first commercial "seedless" grapefruit variety (containing few or no seeds) was the Marsh Seedless which became available in 1889. Because of its highly desirable seedless characteristic, it attained dominance in Florida within a few decades and became the leading grapefruit variety of the world - a status it has retained ever since. It has the following characteristics: Fruit medium in

size, oblate to spherical, from 3 to 5 inches (75mm to 125mm) in diameter. Skin colour pale to light yellow. Rind medium-thin, tough; surface very smooth and even. Flesh buff-coloured, tender, very juicy; flavour good though not so pronounced as in some seedy varieties. The latest-maturing of all commercial varieties. (3)

Various pigmented varieties of grapefruit have been developed, the first of these, a seedy variety, being discovered in 1907 and named the Foster Pink. During the nineteen-twenties two seedless pigmented varieties were found - Thompson, a pink-fleshed limb sport of a Marsh Seedless tree and, a little later, a red-fleshed sport of Thompson, known as Redblush or Ruby. The Thompson was planted extensively in Texas and Florida, but later lost in popularity to the deeper coloured Redblush which has an attractive pink blush on the rind. It appears that heat is a requisite for colouration of pigmented grapefruit as the colour is most intense in grapefruit grown under the hottest climatic conditions. (4) Since the natural colour of the pigmented varieties is difficult to retain during processing, these varieties are largely restricted to fresh fruit outlets.

Thompson (Pink Marsh): Fruit medium in size, oblate to spherical. Skin pale to light yellow. Rind medium thin, tough and surface very smooth. Flesh colour under favourable conditions light pink (but not in the juice); albedo not pigmented; flesh texture tender and juicy; flavour good, similar to Marsh. Holds on tree well but with considerable fading of colour. Midseason in maturity (earlier than Marsh). (5)

Redblush (Ruby): Fruit similar to Thompson except for much deeper pigmentat in the flesh (but not in the juice); crimson blush on rind, especially at points of contact between fruit, albedo pigmented. (6)

Varieties of citrus hybrids resembling grapefruit which are of local importance include the Natsudaidai or summer orange of Japan, where it accounts for some 15 per cent of citrus production; the New Zealand grapefruit or Poorman orange which is also grown in Australia and is the major citrus fruit produced in New Zealand, and the Wheeny grapefruit - also of importance in New Zealand. These three citrus varieties have heat requirements lower than the grapefruit and are of commercial importance chiefly in areas where grapefruit will not ripen satisfactorily. (7)

Climatic types

Reference was made above to the fact that climatic environment affects the characteristics of grapefruit in a striking manner. Under hot desert conditions (little rainfall and that during the winter months only) the skin colour is brighter and deeper and the flavour sharper than in humid climates, and the fruit is of somewhat smaller size, less oblate form and lower juice content. Grapefruit grown under humid tropical, or sub-tropical, conditions (heavy rainfall distributed throughout the year) tend to have thin, blemished skins, which are frequently a greenish colour at maturity because the cool temperatures required to colour the fruit are lacking. (8)

The differences between "desert" and "tropical" grapefruit are sufficiently great to constitute a natural trademark, and to provide the markets with fruit to meet a variety of tastes and preferences. The distinctions most often drawn between the two types are that desert grapefruit have a more attractive outward appearance and a longer shelf life, while tropical grapefruit are juicier and have a finer flavour.

Grapefruit Production In Selected Countries

The United States

The United States is the leading world producer of grapefruit and the volume of the world crop is largely determined by the quantity of fruit harvested in the State of Florida. The bulk of the United States crop is harvested during the period October to April, but the US is unique amongst major producing countries in that grapefruit is available from at least one production area at all times of the year, the official harvesting seasons being as follows:- (9)

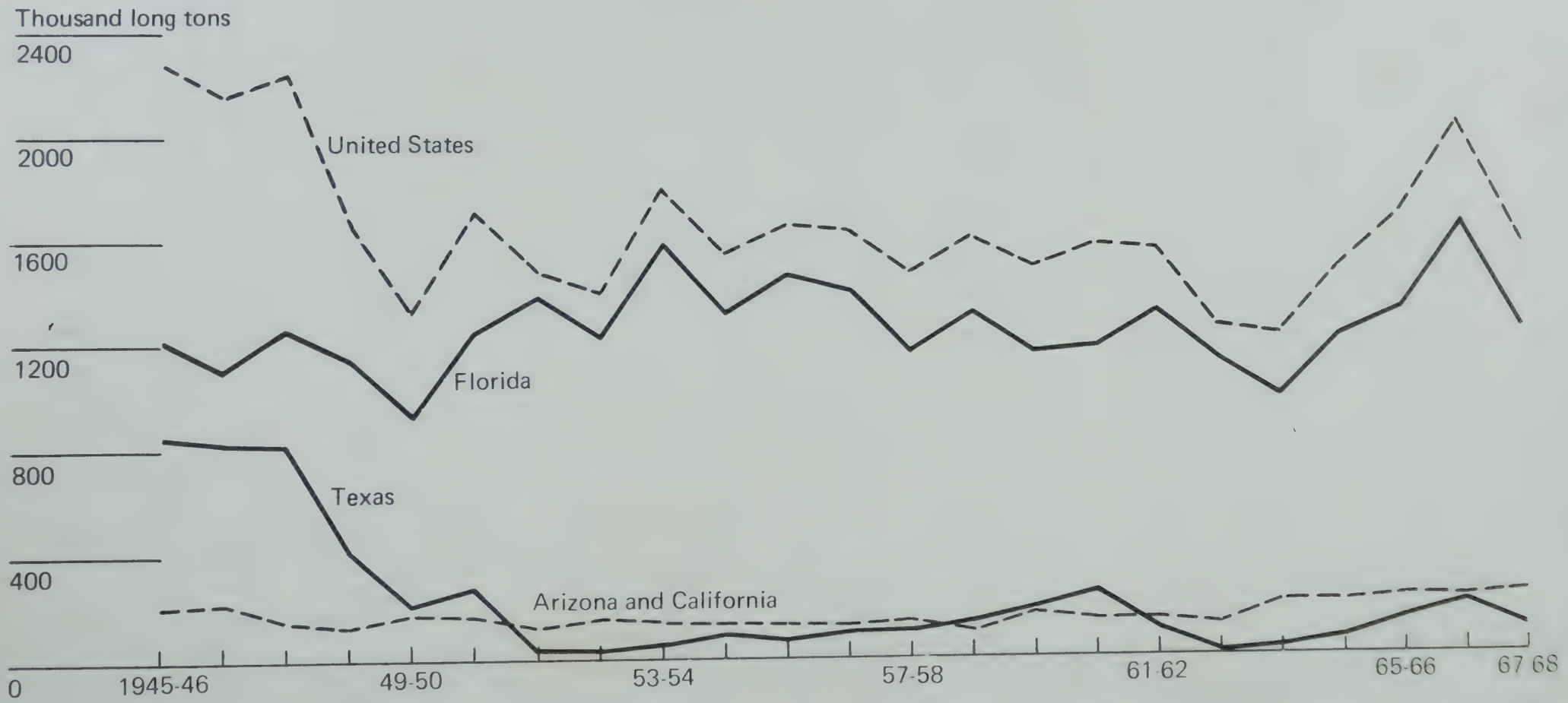
Florida	September 5th to June 10th
Texas	September 25th to May 30th
Arizona	November 1st to July 31st
California Desert Valleys	November 15th to July 15th
Other Areas	March 25th to October 31st

The trend of production of grapefruit in the United States is shown in fig. 2 on page 6 . The peak of production, approximately 2,285 thousand tons, was reached in the 1945/6 season, shortly before the devasting frosts of 1948/9 which reduced production drastically, notably in Texas. Frost damage at fairly frequent intervals since that time checked any expansion of production until recent seasons - in 1966/7 the grapefruit crop again exceeded 2,000 thousand tons. The State of Florida is the major producing area in the United States, and since the 1948/9 season has accounted for at least eighty per cent of US production in most years, as shown in Fig. 2. The other producing areas, Texas, California and Arizona, supplied 6,8 and 7 per cent respectively of the total crop in the 1967/8 season.

Total U.S. production has shown an upward trend since the hard winter of 1962/3, apart from a decline in 1967/8 when production in Florida suffered from cold weather during flowering and the crop in Texas was halved by hurricane damage. Production in 1968/9 recovered to close on 2,000 thousand tons and FAO projections, based on newly planted acreage, estimate that production will reach 2,500 thousand tons by 1975, an increase of twenty-five per cent over the 1968/9 crop. (10)

The total acreage in the United States planted to grapefruit will not be known until the results of a tree census in Texas are published. However in December 1967 bearing acreages in the other producting states were 6,700 acres in Arizona, 12,800 acres in California and 87,500 acres in Florida; in addition there were 32,400 acres in Florida of newly planted grapefruit not yet in bearing ie less than 4 years old. (11) Thus unless considerable areas of old orchards are grubbed out, the bearing acreage of grapefruit in

Figure 2
Grapefruit U.S. production by States 1945-6 to 1967-8



Source: Florida Agricultural Statistics, Citrus Summary, 1964 and 1968 issues, Florida Department of Agriculture.

the United States seems likely to increase rapidly over the next few years, while an even larger proportion of the total acreage will be in Florida.

As regards the types and varieties of grapefruit produced in the United States, white seedless varieties, notably the Marsh Seedless, are probably of greatest commercial importance, certainly in California and Arizona. A large proportion of the Texas crop is understood to be of seedless red-fleshed varieties which have also been of increasing importance in Florida. Finally there is still a substantial acreage of seedy grapefruit (white-fleshed) in Florida which is now used almost entirely for processing. Grapefruit grown in California and Arizona are of the desert type, whereas Florida and Texas grapefruit have the characteristics of tropical fruit.

A high proportion of grapefruit produced in the United States is processed into juice, canned or frozen segments etc, most particularly in Florida. In 1967/8 approximately 790,000 tons of grapefruit were processed, representing fifty per cent of the total crop, the percentage of fruit processed in each area varying from 55 per cent in Florida to 18 per cent in Texas. (12) The proportion of the crop processed depends largely on the size of the crop. Since demand for the fresh fruit remains relatively constant, in good crop years there is a larger volume of fruit surplus to the requirements of the fresh fruit market and consequently a larger proportion of the crop is available for processing. On the other hand if the crop is damaged by frost a large proportion may be processed, even though the crop is a poor one, because frost-damaged fruit may be suitable for juicing although not for the fresh market.

As regards the varieties of grapefruit used for processing, data is available only for Florida where 51 per cent of white seedless grapefruit, 26 per cent of pink seedless and 91 per cent of seedy grapefruit were processed during the 1967/8 season; these types accounted for 40 per cent, 14 per cent and 46 per cent respectively of the total tonnage of grapefruit processed in that season. (13)

Although the United States was the world's major exporter of grapefruit prior to 1965 and still takes second position after Israel, exports of fresh grapefruit are a very minor outlet for United States production, amounting to less than 115,000 tons, or approximately six per cent of total US production in 1967 and 79,000 tons, or five per cent of production in 1968. Exports will be discussed more fully in Part II.

Israel

The normal harvesting season in Israel extends from mid-October until the end of March, although harvesting may begin as early as the end of September in the earliest production areas of the Jordan valley.

Although Israel supplied only 11 per cent of the world crop in 1967, she is the second largest world producer of grapefruit and her production increased by more than 300 per cent over the period 1957 to 1967, from 62,000 tons to

256,000 tons (see Table I of Appendix D). According to the FAO, Israel's production of grapefruit increased at an average rate of 19.4 per cent per annum over the period 1958/9 - 61/2 to 1965/6 - 66/7, but their projections suggest that the rate of increase will fall to an average of 6.1 per cent per annum to yield a production of 320,000 tons in 1975. (14)

The acreage in Israel planted to grapefruit rose from 2,800 acres in 1950 to 12,900 acres in 1962 and was estimated at 16,000 acres in 1969. However much of this acreage is not yet fully bearing; for example in 1964, of the 15,400 acres planted, only 4,200 acres were fully bearing and 8,000 acres were in partial bearing ie less than 7 years old. (15) It was reported that grapefruit plantings were "frozen" for four years from 1963 (16) but new planting now appears to be proceeding where suitable land is available. Howev Israel is a small country and irrigation is necessary to produce good crops, so the area of irrigable land and competition from other crops are factors limiting expansion of the acreage of grapefruit. Citrus is grown chiefly on the coastal strip, but there are some plantings of grapefruit in the Jordan valley, where the fruit ripens early.

Grapefruit grown in Israel are intended chiefly for export as fresh fruit. However only top quality fruit is exported, the inferior grades being sold on the domestic market or used for processing. In 1966/7, when the crop amounted to 222,000 tons, 122,000 tons or 55 per cent was exported fresh, 74,000 tons (33 per cent) used for processing, and domestic consumption of fresh grapefruit amounted to 26,000 tons. (17)

There has been a trend towards increased processing of grapefruit; in 1958/9 for example, when production amounted to only 70,000 tons, 66 per cent was exported fresh and only 18 per cent used for processing. (18)

Israel grapefruit is almost exclusively of the Marsh Seedless variety and is of the desert type. The fruit is generally considered to be of good eating quality and to have a long shelf-life.

Republic of South Africa

South Africa is one of the two major producers of grapefruit in the Southern Hemisphere, the other being Argentina. Harvesting extends from mid-March until the end of August.

In common with many other producing countries, grapefruit production in South Africa has shown a very rapid rate of increase from only 14,000 tons in 1957 to about 76,000 tons in 1967; in fact production trebled between 1961 and 1967 (see Table I of Appendix D). FAO projections estimate production in 1975 at 125,000 tons.

Grapefruit acreage figures are not available for South Africa and the most recent data concerning tree numbers are for 1960, when there were 762,000 grapefruit trees, only 300,000 of which were fully bearing ie more than 6 years old (19); this compares with 267,000 trees, two-thirds being fully bearing, in 1950. However there has been little new planting of grapefruit in recent years and production is expected to rise chiefly by virtue of higher yields, which are expected to increase from an average of 190 lb. per tree in 1960 to 210 lb per tree by 1975. (19) There are two major production areas in South Africa - the East Transvaal, which is the more important and supplies grapefruit from mid-March to June, and the Cape (where after five years of drought, production is limited) where harvesting takes place from July onwards.

Swaziland is often considered part of the South African citrus industry, since citrus produced in Swaziland is sold through the Outspan organisation (see page). Planting in the latter country has increased rapidly. In 1965 approximately 2,600 acres were planted to grapefruit, 72 per cent of the trees being less than four years old (ie non-bearing) and 26 per cent being between four and six years old (partially-bearing). (20) Citrus grown in South Mozambique is also sold by the Outspan organisation, but acreage figures are not available.

Grapefruit produced in South Africa are largely of the Marsh Seedless or similar varieties, although there is limited production of the Redblush variety. South African grapefruit is of the desert type.

The South African grapefruit industry is also geared to the export of fresh fruit; the domestic market is relatively small, but a substantial tonnage is used for processing (21). Red-fleshed varieties of grapefruit are not accepted by processors, and although they are apparently favoured on the domestic market, they form only a small proportion of exports of fresh grapefruit (4 per cent in 1968). (21)

Argentina

Production in Argentina has also shown a rapid increase, from 20,000 tons in 1957 to 85,000 tons in 1967, and the FAO estimates that production will reach 100,000 tons by 1975. These figures are for marketed production only; total production was estimated at 110,000 metric tons in 1968. (22) Argentina is the only major producer of grapefruit in South America but production appears to be entirely for domestic consumption. Exports have been negligible in recent years, only 200 to 300 tons being exported per annum. Small quantities of fruit are used for processing.

Cyprus

Cyprus is the second largest producer of grapefruit in the Mediterranean region. The harvesting season is slightly earlier than that in Israel extending from early October until February. Production of grapefruit has risen rapidly from 8,000 to 9,000 tons in the period 1957 to 1960 to 35,000 tons in 1967. FAO projections estimate the 1975 crop at 45,000 tons.

There is no data available concerning the acreage planted to grapefruit but the total area of citrus cultivation is estimated at 32,000 acres (23) and it is understood that new plantings are being made wherever irrigated land is available.

Virtually the only variety of grapefruit grown in Cyprus is the Marsh Seedless, which is scarcely surprising considering the importance of fresh grapefruit exports - in 1966/7 26,000 tons, or 84 per cent of the crop was exported and only 6 per cent was used for processing. Cyprus grapefruit is of the desert type and is generally considered to be of very good quality.

The Caribbean

Although the individual countries of the Caribbean are relatively minor producer of grapefruit, the area as a whole is an important supplier. All the producing areas of the Caribbean (this term includes Surinam, Honduras and British Honduras) lie within the tropics and the grapefruit produced shows the typical characteristics of tropical fruit.

Harvesting of grapefruit may be virtually year-round under tropical conditions when flowering is initiated by rains following a dry period. Nevertheless, in general there is a primary bloom and hence a primary harvesting period. However under sub-tropical conditions such as obtain in British Honduras, blooming is controlled by both temperature and rainfall and there may be two crops in a year.

The Caribbean area is an exception to the general rule of rapidly increasing production of grapefruit, for in spite of an upward trend in many of the smaller producing countries, Trinidad, one of the largest producers, has actually shown a downward trend in commercial production over the last few years while Jamaican production also declined during the last two seasons. Production in some of the more important countries of the Caribbean is described below.

Jamaica

The Jamaican grapefruit industry began during the inter-war years, and before the Second World War was already a substantial supplier of fresh grapefruit to international markets. Commercial production rose to a peak of 37,000 tons in 1966/7 but since then production has fallen to 22,000 tons in 1968/9. The acreage planted to grapefruit is probably declining as old trees are not replaced; in 1958 3,600 acres were planted to grapefruit but the acreage had fallen to 3,000 acres by 1962. (24)

Marsh Seedless is the most important variety grown and there is also some production of a local sweet seedy grapefruit which is used exclusively for the domestic market; other seedy varieties, such as Duncan, are used for processing.

The bulk of commercial production of grapefruit is processed - about 72 per cent in the 1967/8 season (25) , and domestic demand is also strong - in recent years less than 10 per cent of the crop has been exported as fresh fruit. The export season begins in September and may extend until February, although most shipments are made before the end of December.

Trinidad

Trinidad has also been an important producer of grapefruit since before the Second World War. The latest acreage estimates are for 1958 when 5,800 acres were planted to grapefruit; however most grapefruit trees are old and are not being replaced (24). Commercial production has fluctuated considerably since 1957 from the 35,000 tons of 1959 and 1964 to the 18,000 tons of 1958 and 1967. Unless replanting takes place the downward trend of the last four seasons is likely to continue.

Varieties of grapefruit grown in Trinidad include Marsh Seedless, Duncan and a few Foster Pink.

A large proportion of the crop is processed into canned juice or segments (about 85 per cent in the 1967/8 season (25)) and a relatively small proportion of the grapefruit crop is exported fresh (21 per cent in 1966/7 and 12 per cent in 1967/8 (25)). The export season is late compared with that in many parts of the Caribbean, usually extending from January to April. Trinidad grapefruit is smaller than is usual for tropical fruit and meets the size requirements of European markets.

British Honduras

Before the Second World War the commercially important citrus plantings in British Honduras were largely of grapefruit. In 1962 grapefruit acreage amounted to 1,600 acres, not all of which was in bearing. (26) Production (ie in this case quantities delivered to the canners and packing station) fluctuates considerably, but has not exceeded 11,000 tons in recent years, and has averaged about 9,000 tons over the last 5 seasons. British Honduras is subject to periods of drought and also to hurricane damage. Hurricane "Hattie" resulted in the loss of most of the 1961/2 crop and about 10 per cent of the grapefruit trees.

Nearly all grapefruit are of the Marsh Seedless variety with a few Duncan. In spite of the favourable export season (September and October) exports of fresh grapefruit have been sporadic in recent years, possibly because of a lack of shipping. A large proportion of the crop is processed. (25)

Surinam

Although Surinam is not, strictly speaking, in the Caribbean area but on the North Coast of South America, its citrus is of tropical quality and similar to that grown in the Caribbean area.

The citrus industry was established in Surinam during the nineteen-thirties and by 1960 the area planted to grapefruit was estimated at 855 acres of which 136 acres were non-bearing (27). Production reached 7,000 tons in 1962 and has remained at approximately this level since then.

Most grapefruit are of the Marsh Seedless variety and up to half the crop is exported as fresh fruit - Surinam is able to export grapefruit during every month of the year if climatic conditions are favourable. Although a processing industry was set up to produce frozen concentrated citrus juice in 1961, it closed down a few years later and it is understood that consequently a considerable part of the potentially exportable citrus fruit is being destroyed at present. (28)

Other Caribbean Countries

Grapefruit production is of importance in several other Caribbean countries for which little information concerning production is available, these include Puerto Rico, Cuba, Honduras Republic and Dominica. Grapefruit grown in Puerto Rico are primarily for domestic consumption but a significant proportion of the production in Honduras and Dominica is exported to Europe. Cuba has recently begun to export to Europe during the months of September to January and apparently is planning to increase exports. (29)

PART II - WORLD TRADE IN GRAPEFRUIT

World trade in grapefruit has seen a remarkable increase during the post-War period as the minor producing countries have expanded their export potential and the grapefruit eating habit has spread from the Anglo-Saxon countries to the countries of continental Europe.

Immediately before the Second World War Israel was the major exporter of grapefruit, followed by the United States and South Africa, while the United Kingdom was the major importer, followed by Canada. During the nineteen-forties many of the Israeli citrus groves were abandoned, the American crop rose to record levels and world trade was completely disrupted. After the War the United States took Israel's place as the major exporter of grapefruit and her chief market, Canada, was the major importer. Since the early nineteen-fifties the gradual relaxation of restrictions on imports (which were imposed by European countries in order to save dollars) and increasing production in Israel and Cyprus in particular, have permitted the very rapid expansion of grapefruit consumption, particularly in the EEC countries. The very low level of imports into these countries during the pre-War years may well have resulted from restrictive trade policies and reliance on bilateral trade agreements in those years.

Quality and packaging requirements for internationally traded grapefruit are exacting. For European markets the fruit should have a brightly coloured, unblemished skin, and as long a shelf-life as possible. These requirements make desert-type grapefruit better suited to European trade than tropical grapefruit. Outside North America outlets for red or pink-fleshed grapefruit are limited.

Import duties levied on grapefruit are generally quite low - in the range of 6 to 7 per cent - and when the Kennedy Round concessions are fully implemented in 1972 imports into some countries, eg the Scandinavian countries other than Norway, will be free of duty. Since grapefruit is not produced on a commercial scale in any EEC country, there is no reference price system for EEC imports. The chief barriers to trade are the United Kingdom's prohibition of imports from the Dollar Area during October and November, and the Italian phyto-sanitary regulations.

Exports

Total world exports of grapefruit have shown a steady upward trend, since 1957 (see Table 1 on page 14) broken only in 1963 as the result of frost damage to the Florida crop; however exports in 1964 recovered to a level exceeding that of 1962 and in 1967 world exports exceeded 330,000 tons compared with an annual average of less than 150,000 tons in 1957-59.

Until 1963 the United States was the largest exporter of grapefruit, supplying almost half world exports during the late nineteen-fifties. However in 1964 exports from Israel exceeded those of the United States, and by 1968 Israeli exports of 152,400 tons were nearly double American exports (which were probably affected by the small 1967/8 crop) (see Table 1 on page 14). Both

Table 1

Exports of Grapefruit from Principal Countries

	1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	1968
Israel	*45,749	*52,353	64,529	82,256	91,201	110,545	121,949	152,4
United States	73,205	89,923	70,990	73,914	87,497	95,790	114,871	73,6
South Africa	10,823	17,416	20,587	31,983	34,182	47,094	46,743	56,8
Cyprus	...	* 9,580	12,590	15,810	24,822	19,674	32,300	32,7
Trinidad and Tobago	5,482	8,443	6,134	4,349	3,445	4,941	4,480	2,3
Morocco	5,485	7,157	5,566	5,073	3,317	(5,600)	4,507	...
Spain	1,046	1,825	2,241	2,858	3,142	3,959	3,313	3,2
Jamaica	2,120	2,960	6,056	3,116	4,065	1,604	1,630	2,7
Surinam	...	* 3,956	3,458	1,751	2,489	2,979	...	...
Brazil	802	2,150	3,904	3,024	3,007	1,702	2,087	...
Dominica	...	895	749	1,293	1,200	1,710	2,486	2,0
TOTALS (a)	*144,712	*196,658	196,804	225,427	258,367	(295,598)	334,366	...

... Information no available

( ) Unofficial estimate

(a) Totals of available figures

* Average of less than 3 years

Source: Trade Returns

Israeli and US fruit is exported largely during the months October to April (with the exception of small quantities of Californian summer grapefruit) but the third largest exporter, South Africa, is able to supply world markets during the period April to September, and exported approximately 56,800 tons in 1968. Cyprus is the only other major exporter of grapefruit, contributing 32,700 tons in 1968; her season extends from October until February.

Other minor suppliers include several Caribbean countries, notably Trinidad, Jamaica, Surinam, Cuba and Dominica; Morocco, Spain and Turkey in the Mediterranean; and Mozambique, Swaziland and Brazil amongst the Southern hemisphere suppliers.

Most exporting countries now have a central governmental or co-operative organisation which is responsible for handling all exports of citrus fruit. The major exception to this rule is the United States, but Brazil and Spain are two minor exporters of grapefruit who rely on individual exporters. Although Cyprus grapefruit is marketed by many independent exporters, the Cyprus Ministry of Commerce and Industry fulfils some of the functions of a central marketing organisation, such as quality control prior to export, and advertising and promotion in the importing countries.

The two largest central exporting agencies are the Citrus Marketing Board of Israel (CMBI) and the South African Citrus Board, usually known in importing countries as the Outspan Organisation. These organisations are government agencies and the sole exporters of fresh citrus fruit from Israel and South Africa respectively. The CMBI and the Outspan organisation cover every aspect of marketing from providing packing materials (bought in bulk), exercising a strict quality control on all fruit exported, and arranging for shipment to importing countries, to checking quality at the ports of discharge (a sample is taken of the fruit from each pack-house) and promoting sales of citrus under the brand names "Jaffa" and "Outspan" respectively. These organisations maintain offices in the major importing countries which inform the Head Offices of the day-to-day changes in prices and the supply positions in the various markets, so that supplies may be channelled to markets according to their requirements. If necessary the CMBI and the Outspan Organisation arrange for the fruit to be held in cold-storage, particularly towards the end of the season, in order to smooth out fluctuations in supply and extend their marketing seasons.

Since 1965, when the export of agricultural produce was nationalised, all Moroccan citrus has been exported by the Organisation for Commerce and Export (OCE), which operates on very similar lines to the CMBI and the Outspan Organisation. Although the individual co-operatively - owned pack-houses still use their own brand-names, Moroccan citrus is promoted under the general brand-name "Maroc".

Several of the exporting countries in the Caribbean have channelled all citrus exports through the citrus growers' co-operative associations since before the War. The Citrus Growers Associations (CGA's) of Jamaica, and Trinidad and the Surinam Citrus General operate central pack-houses for the grading and packing of fruit for export, and are responsible for shipping the fruit to European markets (though not necessarily for exporting fruit to neighbouring countries). In Dominica the CGA is responsible for marketing export fruit which is packed in the Government-owned pack-house. The Jamaican and Trinidad CGA's also organise small scale advertising campaigns in the importing countries (chiefly in the United Kingdom).

Where any form of central exporting agency exists it is usual for all export receipts to be pooled and the growers paid an average price, which may take into account the quality of their fruit, and the time of year when it was supplied. A standard charge would be deducted for packing, shipping and

importers' commission. In Dominica, however, each grower's fruit is separately selected for packing and the growers receive a payment based on the average wholesale price achieved by each consignment including their fruit, less the usual standard charges. It is understood that Morocco intended to change from a pool system to a system of individual grower payments in the 1969/70 season.

However the payment due to each grower is calculated, it is normal for the grower to receive the sum due to him in instalments - a fixed (and frequently nominal) sum per box of fruit delivered to the pack-house and one or more lump-sum payments at the end of the season, when the total payment due to each grower has been calculated. Jamaica is an exception to this rule; the growers there receive only one payment, when the fruit is delivered to the pack-house, this being based on the estimated average net return per box.

As regards marketing of grapefruit in the importing countries virtually all exporters, whether private or government concerns, adopt a similar pattern of trade. The fruit is consigned, or sold, to one or more agents - in the case of the larger Marketing Boards, their local offices; in the case of other exporters, importing firms - and distributed by the agents to a "panel" of wholesalers and brokers throughout the importing country. Wholesalers are appointed to the panel each season and their re-appointment frequently depends on their performance as regards quantities sold and prices obtained. There is considerable prestige (and a large volume of trade) involved in being appointed to the panels of the major Marketing Boards. The use of wholesale panels is very widespread in the United Kingdom, France, Switzerland and Scandinavia, but in the Netherlands and, to a decreasing extent, in Germany, large quantities of grapefruit are sold at the auctions. In this case the importer may sell the fruit himself or appoint brokers to the panel.

The influence exerted by exporters on their wholesale panels varies considerabl and depends on the competitive strength of the exporter. Both the Outspan Organisation and the CMBI have set target prices each week in recent seasons for the various grades and counts of their fruit in each market, and in practice the target prices frequently become the ruling market prices. The Outspan Organisation further limits the freedom of action of the wholesaler by prohibitin their panel members from handling competing citrus without the Organisation's permission. The CMBI attempted to enforce a similiar exclusive contract on its panel members a few years ago, but was unsuccessful, in the United Kingdo at least, presumably because of the greater number of supplying countries during the Israeli season. Minor Marketing Boards and individual exporters of course can exert little influence on their wholesale panels.

Although most Marketing Boards and importers sell direct to major outlets such as chain stores the basis of these contracts is not known. Some Boards base their selling price on the ruling wholesale price while others operate a fixed price over a season, or part of a season.

The export returns received by the different supplying countries, as shown in their Trade Returns, are generally influenced by the country's supplying season. Thus the highest returns are realised by suppliers during the summer months eg South Africa (and to some extent the United States), and particularly by those who can supply world markets during September and October, when grapefruit supplies are especially limited eg Jamaica. Conversely, suppliers during the Northern Hemisphere season - late October to April - receive lower returns, particularly if the bulk of their exports is sold during the months January to March (eg Trinidad).

Other factors also affect the export returns, for example distance from markets - this probably helps to explain the low Brazilian returns (Brazil being very far distant from her European markets). The quality of fruit exported from each country will also affect export returns - for example Israeli grapefruit is generally considered to be of very good quality and Israel records higher export values than Spain in spite of the latter's more favourable season (October to December only), and proximity to European markets, probably because Spanish grapefruit is not always of good quality.

Israel

The expansion in exports of grapefruit from Israel has paralleled the expansion of production in that country. From the 45,750 tons exported in 1959 exports of fresh grapefruit increased more than threefold to 152,411 tons in 1968 (see Table II of Appendix D). However exports during 1969 are likely to show a decline, since the 1968/9 crop finished early. Export availabilities in the 1969/70 season were estimated at approximately 155,000 tons. (30)

Israeli exports are consigned almost entirely to Western European countries, notably the German Federal Republic (hereafter referred to as Germany), the United Kingdom and France, who took respectively 27 per cent, 24 per cent and 22 per cent of Israel's grapefruit exports in 1968, followed by Belgium (7 per cent) the Netherlands (6 per cent), Switzerland (4 per cent) and Italy (3 per cent). Germany has been Israel's largest export market since 1965 - before that year the United Kingdom was the major outlet, taking 32 per cent of exports in 1964 compared with Germany's 20 per cent.

Israel's grapefruit production is aimed at the fresh grapefruit trade, and all grapefruit, whether sold ultimately for processing, on the domestic market or for export is handled by the Citrus Marketing Board (CMBI), which was established shortly after the Second World War. Growers send all their fruit to one of the Board's 52 packing-houses where it is sorted into two export grades, a domestic grade, and culls for processing.

Since there are no cold-storage facilities for citrus at the ports of Haifa and Ashdod, deliveries of fruit from packing-house to port are very carefully co-ordinated to coincide with the time of the ship's arrival. Citrus is never held in the port for more than two days before loading into refrigerated ships. At the port the fruit is inspected again by the Government inspectorate to ensure that it meets international quality standards.

Shipment from Israel to Europe takes between one and two weeks, according to the port to which the fruit is consigned. Citrus intended for Northern Europe may be shipped to Trieste or Marseilles and then on-shipped by rail, but more commonly is sea-freighted to a North European port which is not however decided until the ship nears Europe, according to the market situation.

Israeli grapefruit is chiefly sold on a consignment/commission basis in the United Kingdom, Germany, the Netherlands and Belgium and on a firm price basis to Switzerland, Austria, Scandinavia, while 30 per cent of sales to France are also on a firm price basis. All Israeli grapefruit is sold under the "Jaffa" brand which is heavily promoted and advertised in the national and trade press and on television.

Since the 1967/8 season some grapefruit from Gaza has been handled by the CMBI but was sold under separate brand names. In the 1969/70 season it is expected that most Gaza grapefruit will be packed to the CMBI standards and sold by the Board under the "Azdar" brand name.

In order to extend the marketing season Israeli grapefruit is held for up to two months in cold stores in the various importing countries at the end of the harvesting season. This permits the marketing of fruit from October until May, or even June, although harvesting is completed by April.

Since 1964 average export returns have shown an upward trend, from £42 19s 0d per ton in 1964 to £48 3s 0d per ton in 1968 (it should be remembered that Israel devalued in late 1967).

The United States

Immediately after the Second World War the USA was a major supplier of grapefruit to European markets, however her exports to this area have suffered in comparison with the newer suppliers, in the sense that US exports have risen at a slower rate than European consumption, for several reasons. After the War there was a dollar shortage and quotas and various other restrictions were placed on the importation of American fruit into most European countries, indeed, the United Kingdom still maintains a quota for imports of grapefruit from the Dollar Area. Even when restrictions on imports were lifted it proved difficult for Florida grapefruit in particular to compete with Israeli on European markets because high labour costs and shipping

costs made the American fruit more expensive than Israeli and also, although Florida grapefruit is of good eating quality, it does not have the attractive outward appearance of Mediterranean-grown desert-type grapefruit and has a relatively short shelf-life. Californian grapefruit, although also expensive in comparison with the Israeli, does not suffer as regards quality, and also grapefruit from some areas of California is available during the summer months and does not compete with Israeli fruit.

Nevertheless until 1962 total US exports of fresh grapefruit showed an upward trend and exceeded 100,000 tons in that year (much of this total going to Canada) but the frost of the following season reduced the quantities of fruit available for export, and exports fell to just over 70,000 tons. However exports increased again to reach 115,000 tons in 1967 before the poor crop of 1967/8 again reduced the quantity of fruit available for export, only 78,660 tons being exported in that year (see Table III of Appendix D). However since production is expected to increase substantially in the future, it seems likely that efforts will be made to increase exports.

The largest single market for US grapefruit is Canada, who usually takes about seventy per cent of US exports and actually took more than 80 per cent in 1968. Other major markets are France, who accounted for 9 per cent in 1967 (a more typical year than 1968), the Netherlands (7 per cent) and West Germany (3 per cent). Of these latter three countries only France has taken increasing quantities of grapefruit over the last decade. Exports to the Netherlands, Germany and other countries in Europe have remained static or even fallen in recent years, although it is possible that some grapefruit consigned to France is re-exported to other European countries.

Exporting is carried out by the large citrus marketing organisations which are generally organised on a co-operative basis and sell their members' fruit under several brand names. Examples are the Florida Citrus Mutual which has more than 14,500 members, the Seald-Sweet Organisation which has more than 3,000 members and Sun-Kist Growers Inc. of California. Some of these organisations sell grapefruit on an fob or c and f basis, which is unpopular with many European importers, while others sell on a consignment/commission basis. There is no standardisation of packaging as between marketing organisations and of course many brand names are sold on export markets. However, each State imposes standards of quality and maturity.

Average export returns were only £38 7s 0d per ton for the years 1960 to 1962, rose to £54 18s 0d in 1964 and then declined to £44 5s 0d in 1967 before rising again to £64 8s 0d in 1968 following the short 1967/8 crop.

Republic of South Africa

South Africa has the advantage of being the only major supplier of grapefruit to world markets during the period May to September. Exports from the other major producer in the Southern hemisphere, Argentina, are negligible, and only Brazilian and Californian together with cold-stored Israeli fruit offer any competition. Exports rose from only 10,820 tons on average over the period 1957 to 1959 to 46,743 tons in 1967, chiefly as the result of rapidly increasing demand in France and West Germany (see Table IV of Appendix D). Exports to South Africa's traditional market, the United Kingdom, have also risen and still accounted for 51 per cent of the total in 1967, when Germany and France took 23 and 16 per cent respectively. Exports to other countries of Western Europe have remained small, although over 1,000 tons, or 2 per cent of the total, was consigned to Italy in 1967. Preliminary figures for 1968 show another considerable increase in total exports to 56,800 tons.

All large-scale citrus growers in South Africa belong to the co-operative Citrus Exchange, whose representatives have a majority on the South African Citrus Board which controls the marketing of the fruit. The Citrus Board also markets the fruit of growers in Swaziland and Southern Mozambique who are affiliated to the Citrus Exchange.

The Board's overseas sales organisation, known as the Outspan Organisation (all South African citrus is sold under the Outspan brand, as is also that from Swaziland and Mozambique handled by the Citrus Board), is centred on London and has national Sales Offices in other major importing countries.

The Citrus Board deals directly with large buyers such as multiple stores and may even pack citrus in boxes of their customer's specification. However this makes for inefficiency in packing and shipping and the Board may discontinue this service in future. Sales to large-scale buyers are usually on a fixed-price basis, contracts being made for the season.

Over the last six seasons average export returns have been high compared with those of most other suppliers ranging from £40 2s 0d per ton in 1966 to £56 9s 0d in 1963; preliminary figures put average returns for 1968 at £52 10s per ton.

Cyprus

Cyprus has benefitted from preferential treatment on the British market (where her non-Commonwealth competitors pay a 5s 0d per cwt import duty) but even so, exports to the United Kingdom accounted for only 53 per cent of the total in 1968 as compared with 78 per cent in 1962 (see Table V of Appendix D). Expansion of exports to Germany has been particularly rapid, rising from only 800 tons (8 per cent of the total) in 1962 to 9,460, or 29 per cent in 1967, although there was a decline in exports to this country in 196

Other important export markets are the Netherlands, which took 7 per cent of the total in 1968, and Switzerland (4 per cent). Various East European countries, notably Czechoslovakia and East Germany, have on occasion taken significant quantities of Cyprus grapefruit.

A very large proportion of the Cyprus grapefruit crop is exported as fresh fruit (approximately 80 per cent) - alternative outlets, the domestic market and processing, are extremely limited. There is no central export organisation in Cyprus - private exporters, large growers and co-operatives export on their own account under many different brand names. The Ministry of Commerce and Industry, however, undertakes many of the functions of an exporting organisation. The Ministry issues free point-of-sale advertising material to retailers and organises promotions for Cyprus citrus through the commercial sections of the Cyprus embassies in importing countries. It is intended to set up a Citrus Organisation to regulate production and exports, improve standards, and extend advertising in export markets, although the actual exporting would continue to be carried out by individuals. However when first put to the citrus industry the scheme was turned down. Average export returns for grapefruit have shown a rising trend from approximately £32 per ton in 1962 to £45 8s 0d per ton in 1968.

Trinidad

Exports of fresh grapefruit from Trinidad have fluctuated widely during the last decade - in 1962 at 10,100 tons Trinidad's exports exceeded those of Cyprus, but since then exports have shown a declining trend and amounted to only 2,374 tons in 1968. In fact the major proportion of grapefruit grown in Trinidad is now processed into canned segments and juice - the canning of segments recommenced after the War only in 1962, which may partly explain the fall in exports of fresh fruit since that year.

The United Kingdom has always been the major market for Trinidad grapefruit, usually accounting for between 65 and 85 per cent of exports. However in 1967 the UK took only 56 per cent of Trinidad's grapefruit exports while Germany accounted for 43 per cent. Germany is the only large export market for Trinidad grapefruit apart from the UK, but consignments to that country have been rather erratic, ranging from 1,900 tons in 1967 to only 550 tons the following year.

The co-operative Citrus Growers Association has handled all citrus exports since 1932. Grapefruit is stamped with the brand name "Trinidad" and has been promoted together with Trinidad canned grapefruit segments and juices.

Export returns for Trinidad grapefruit fell from £34 13s 0d per ton on average over the years 1957 to 1959 to £31 13s 0d per ton in 1965, but rose again to £35 16s 0d per ton in 1968. (Trinidad also devalued in late 1967) Trinidad's grapefruit suffers stiff competition from Israeli and Cyprus fruit, since her export season begins in January.

Morocco

Grapefruit is a minor crop in Morocco and exports have shown a decline in recent years. From an average of 7,160 tons exported during the years 1960 to 1962 exports fell to 3,320 tons in 1965, then rose again during the next two years before falling to 2,870 tons in the 1967/8 season and to 980 tons in 1968/9 (31). France has traditionally been Morocco's main export market and took 92 per cent of her exports of grapefruit in the years 1957 to 1959. From 1960 Germany became an increasingly important market and in 1964 and 1965 was the largest importer of Moroccan grapefruit, taking 47 per cent and 49 per cent respectively of her exports in thos two years, as against the French 26 per cent and 35 per cent. However exports to Germany fell to 18 per cent in 1967 and were negligible in the 1967/8 and 1968/9 seasons. (31) The United Kingdom has also become an important market latterly - she took 23 per cent of Morocco's grapefruit exports in 1967.

The marketing of Moroccan citrus, and other vegetable products, was nationalised in 1965 under the OCE (Office for Commerce and Export). The packing-houses work on a group basis covering particular areas, although they are privately or cooperatively owned.

The OCE has subsidiary companies (OCA) in the importing countries who check the quality of the fruit again and distribute it to a panel of wholesalers. Since nationalisation, Moroccan citrus has been promoted under the "Maroc" brand name, which has been stamped on the fruit this season (1969/70), although the cartons still show individual packing-house brand-names.

Average export returns for Moroccan grapefruit fluctuated between £32 17s 0d and £44 7s 0d per ton over the years 1963 to 1967.

Spain

Again grapefruit is a very minor crop in comparison with oranges, but exports of grapefruit rose from an average of 1,046 tons over the years 1957 to 1959, to 3,959 tons in 1966, before falling again to 3,216 tons in 1968. Germany has been the largest market for Spanish grapefruit in most recent years, although in 1966 the United Kingdom, usually the second largest market, took first place Other important buyers of Spanish grapefruit are France, the Netherlands, Switzerland and Belgium. In 1967 the relative proportions taken by these countries were Germany - 39 per cent, United Kingdom - 25 per cent,

France - 15 per cent, Switzerland - 9 per cent, the Netherlands - 8 per cent and Belgium - 3 per cent.

Spanish citrus is handled by a multitude of private exporters, some of which are also growers. Generally speaking exporters buy from the growers at a firm price when the fruit is still on the trees or delivered to the pack-house and thus the exporters carry all the risks of exporting. The exporters pack the citrus and arrange for shipping (frequently by rail, rather than by sea). Sales are made on a consignment/commission basis in countries where auctions still operate and on a firm basis to those countries (chiefly Scandinavia) where no auctions are held. Average export returns for grapefruit fell from £33 8s 0d per ton on average from 1960 to 1962 to only £23 4s 0d per ton in 1965 before recovering again to £32 0s 0d per ton in 1968. (Spain also devalued in late 1967).

Jamaica

Jamaican exports of fresh grapefruit are of minor importance in relation to the quantities used for processing and the volume of fresh fruit exports has fluctuated considerably in recent years, reaching a high of 6,056 tons in 1963 and a low of 1,604 tons in 1966. A very large proportion of Jamaican grapefruit is exported to the United Kingdom, between 65 per cent (in 1965) and 100 per cent (in 1967). Substantial quantities have also been consigned to New Zealand under a fixed price agreement, while smaller quantities have been sent to Germany and the Netherlands. In the United Kingdom, Jamaican citrus is promoted under the Juciful brand name.

As in Trinidad, all exports of grapefruit are channelled through the Citrus Growers' Association which packs the fruit and consigns it to importers. After rather low average exports returns during the period 1960 to 1962 (£34 9s 0d), export returns exceeded £61 0s 0d per ton from 1963 onwards, reaching £77 18s 0d in 1967 before falling to £65 0s 0d in 1968. These unusually high returns probably result from Jamaica's favourable export season, during September, October and November, when grapefruit prices are at their highest. The system of payment to growers is unusual in that there is only one payment based on the estimated average return per box. (32)

Surinam

Exports of grapefruit from Surinam also tend to fluctuate from year to year - in 1963 approximately 3,500 tons were exported, but in 1964 less than 1,800 tons. The Netherlands is usually the only major export market for Surinam grapefruit, but in 1960 over 1,700 tons were consigned to the United Kingdom.

Most grapefruit for export is packed in the Central Packing-house operated by a semi-governmental body composed of citrus growers, known as the Surinam Citrus General. It is understood that the bulk of Surinam grapefruit

has been consigned or sold direct to a large supermarket chain in the Netherlands(33) during recent seasons. Export returns averaged around £25 0s 0d per ton over the period 1963 to 1966.

Brazil

Although Brazil is only a minor exporter she supplies world markets during the Northern hemisphere summer months when supplies are generally limited. However Brazilian exports fell from a peack of 3,900 tons in 1963 to 1,700 tons in 1966 although they subsequently recovered to 2,100 tons in 1967. Before 1965 the United Kingdom was the major export market for Brazilian grapefruit, taking over 60 per cent on average from 1960 to 1963, but exports to the UK fell to only 227 tons or 11 per cent cent in 1967. During the 1966 and 1967 seasons the Netherlands was the major outlet, taking 49 per cent in 1967, while West Germany and Sweden accounted for 32 per cent and 8 per cent respectively in the latter year.

The export of citrus is not centrally organized in Brazil, and individual exporters prefer to sell on fob terms since the cost of shipping to European markets is very high and consignment/commission sales are therefore very risky. The high cost of transport probably explains the low fob prices realized for grapefruit exports, which fell from £22 9s 0d per ton on average from 1957 to 1959 to only £12 19s 0d per ton in 1966, although returns improved to £16 6s 0d per ton in 1967.

Dominica

Dominica is a minor producer of grapefruit, but exports have risen from only 692 tons in 1960 to 2,486 tons in 1967. A major proportion of these exports is consigned to the United Kingdom (84 per cent in 1960 and 94 per cent in 1967), the remainder being exported to other islands in the Caribbean. Although Dominica exports relatively small quantities of grapefruit, exports to Europe are concentrated into the three months of the year - September to November - when world supplies of grapefruit are limited and Dominican grapefruit is an important factor on the United Kingdom market during these months.

The Co-operative Citrus Growers' Association of Dominica is dominated by the larger citrus growers; members are required to market all citrus fruit for export or processing through the Association. Each grower has his fruit separately selected for packing and is not therefore penalized by the presentatio of sub-standard fruit by other producers. (34) The CGA organizes the shipment of grapefruit to Europe on the banana boats owned by Geest Industries Ltd, who are also UK importers and wholesalers.

Average fob returns for grapefruit exported to the United Kingdom fell from an average of £42 5s 0d per ton during the period 1960-62 to only £20 7s 0d per ton in 1966 before rising again to £32 0s 0d per ton in 1968.

Imports

The tonnage of fresh grapefruit imported by the major markets (chiefly Canada and the countries of Western Europe) in 1967 was twice the 1957 to 1959 average (see Table 2 on page 26). All importing countries, other then the United States and New Zealand, showed some increase in imports over this period, ranging from 34 per cent in the case of Norway to Italy's 3,076 per cent increase (the latter from a very low base).

Before the Second World War the United Kingdom and Canada were the only large importers of grapefruit, the United Kingdom alone accounting for between 50 and 60 per cent of world imports. (35) After the War, however, UK imports dropped to half their pre-War level whereas Canadian imports had doubled. Although imports into many Continental European countries began to increase during the nineteen-fifties, imports into the UK were slow to recover and Canada was the major importer of grapefruit until 1960. After 1959 imports into the United Kingdom began to increase, while Germany, France and the Netherlands, in particular, became of increasing importance as importers. Canadian imports almost entirely from the United States, fluctuate according to the size of the US crop and therefore were low in 1963 and 1964 and unusually high in 1967.

Some minor importing countries such as Belgium, Switzerland and the Scandinavian countries, showed a less rapid rise in imports than France, Germany and the Netherlands, but Italian imports rose very rapidly from less than 200 tons in the period 1957 to 1959 to 6,500 tons in 1968.

Of the non-European importers Japan has increased her imports of grapefruit, although these are subject to quota limitation, and compete with the locally-grown summer oranges (Natsu-daidai). United States imports, always marginal, showed a downward trend to 1964, after which year grapefruit imports were not separately shown in the Trade Returns. New Zealand is virtually self-sufficient in local grapefruit-like hybrids but imports about 300 tons of grapefruit from Jamaica every year. Imports of grapefruit into the Comecon countries are small and sporadic, depending on bilaterial trade agreements, and amounted to about 5,000 tons in 1967.

Imports into the major importing countries are discussed below. The general decline in imports from the USA in 1968 is partly explained by the short US crop of 1967/8.

The United Kingdom

During recent years the United Kingdom has been the largest world importer of grapefruit, with the exception of 1967, when Canadian imports were unusually high. Imports in 1968 amounted to 91,175 tons - twice the average tonnage for the years 1957/59. However the upward trend has not been a steady one (see Table VI of Appendix D).

Table 2

Imports of Grapefruit into Various Countries

	1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	19
United Kingdom	45,590	60,441	56,822	72,462	71,075	75,382	79,801	91,
Canada	59,738	66,818	49,733	54,254	66,735	63,283	80,921	68,
German Federal Republic	19,051	25,275	34,271	40,810	49,385	59,743	61,792	73,
France	17,250	21,760	26,577	33,002	36,849	40,466	46,378	53,
Netherlands	4,733	7,687	9,704	11,099	12,120	11,862	15,412	20,
Belgium	6,215	5,980	6,580	8,593	9,381	9,686	11,111	11,
Switzerland	...	6,603	7,042	8,279	7,464	7,681	9,856	9,
Italy	154	269	313	686	1,558	3,361	4,891	6,
Sweden	2,423	2,597	3,241	4,070	4,745	4,474	4,530	4,
Denmark	1,790	2,424	2,618	3,523	3,228	3,615	3,597	3,
Finland	944	1,178	1,575	2,003	2,043	2,164	2,160	2,
Norway	1,029	1,068	1,025	1,120	1,527	1,570	1,380	1,
Japan	...	...	426	730	659	1,020	1,108	1,
United States	1,557	919	387	899	...	...	...	..
New Zealand	313	312	328	314	304	275	299	..
TOTALS (a)	160,787	203,331	200,642	241,844	267,073	284,582	323,236	346,

... Information not available

(a) Totals of available figures

Source: Trade Returns

Throughout the period under review (1957 to 1968) the major suppliers of the United Kingdom market have been Israel, South Africa and Cyprus, in that order, although during the period 1957 to 1962 the Caribbean countries as a group (Jamaica, Trinidad and the Windward Islands) were of more importance than Cyprus. Over the whole period Israel and Cyprus increased their shares of the British market - from 35 per cent and 12 per cent respectively in 1957/59 to 45 per cent and 18.5 per cent in 1968. South Africa had 21 per cent of the market in 1957/59 and 1968, but the share of the Caribbean countries fell from 14 per cent to 5 per cent. This decline was due to smaller consignments from Trinidad and Jamaica - receipts from the Windward Islands (almost entirely Dominica) increased by 150 per cent between 1960 - 1962 and 1968.

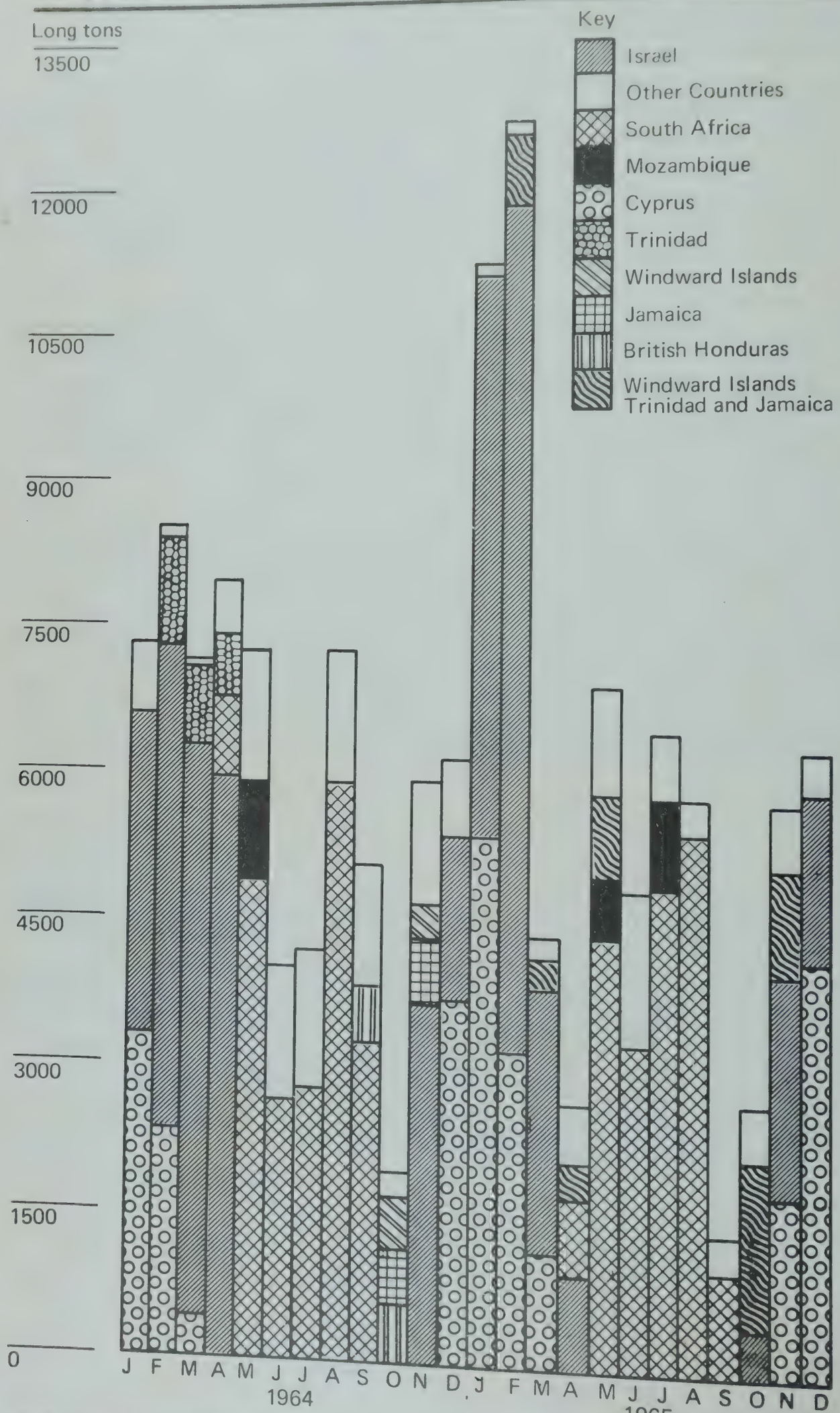
Minor suppliers to the United Kingdom market include Swaziland, who in 1968 supplied 5,082 tons, accounting for nearly 6 per cent of UK imports, compared with less than 300 tons on average between 1960 and 1962. Imports from Mozambique also rose, from 1,045 tons in 1957 to 1959 to 3,894 tons in 1967, although there was a decline to 1,857 tons in 1968. The United States, Spain and Morocco send small quantities of grapefruit to this market but imports from Argentina, Brazil and British Honduras have declined.

The seasonal distribution of imports generally shows a high level of imports during the months December to May, with a peak in February or March, and a lower level of imports during the summer, reaching a trough in September or October (see fig. 3). The histograms of monthly imports during the years 1964 to 1969 show that Israel is the main supplier of grapefruit from November or December until April, while South Africa supplies the market from April to September. The season for Cyprus grapefruit extends from October or November until February or March. Spain and Morocco supply the market from October until December and Trinidad from January or February until April or May.

Suppliers during the summer months include, besides South Africa, Swaziland, Mozambique, Brazil and the United States. Jamaica, the Windward Islands (Dominica) and in earlier years, British Honduras, have the advantage of supplying the market during September, October and November when competition from the major suppliers is least severe. Imports from the United States, a potential supplier during these months, are permitted only during the months December to September (before 1968/9 only from March to September). In 1968, a substantial quantity of Lebanese grapefruit was received in October, and in 1969 several shipments were received from Cuba during this month.

Figure 3a

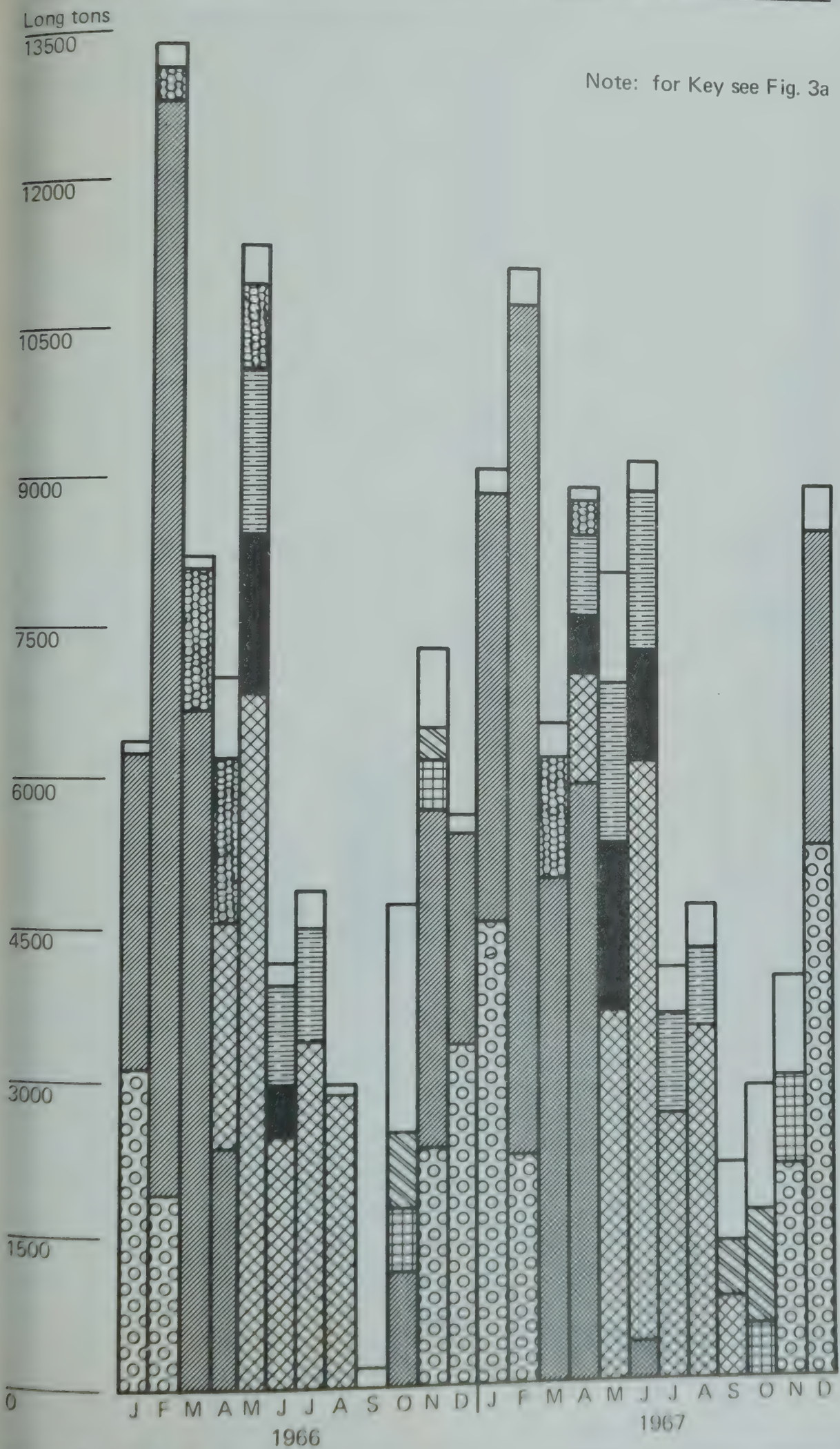
Grapefruit Monthly imports into the U.Kingdom 1964-65



Source: Fruit Intelligence, Commonwealth Secretariat.

Figure 3b

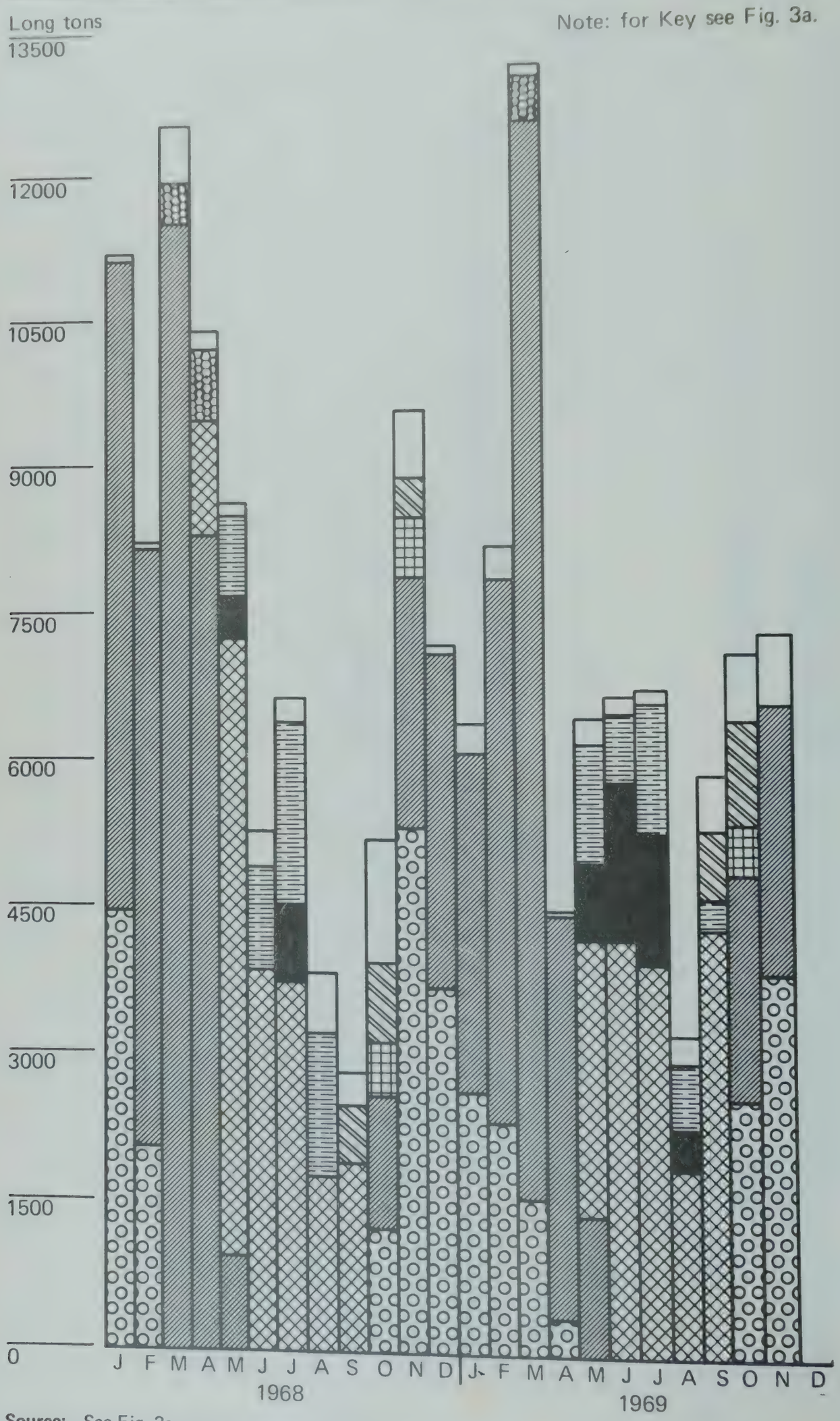
Grapefruit Monthly imports into the U.Kingdom 1966-67



Source: See Fig. 3a

Figure 3c

Grapefruit Monthly imports into the U.Kingdom 1968-69



Source: See Fig. 3a.

Canada

Canadian imports of grapefruit have shown an upward trend with considerable year to year fluctuations over the period 1957-59 to 1968 (see Table VII of Appendix D). The great dependance of Canadian imports on American supplies is demonstrated by the fact that in most years the United States supplies 99 per cent of Canadian imports - the only exceptions being 1964 and 1968 when the American crop was smaller than usual and the US supplied only 97 per cent of Canadian imports. British Honduras supplied the Canadian market until 1963, while South Africa has consigned increasing quantities of grapefruit to Canada since 1964, and accounted for nearly 2 per cent of total imports in 1968. Other suppliers include Mexico, Cuba, Jamaica, Brazil and even Hong Kong.

The seasonal distribution histograms (fig. 4) show a definite seasonal pattern of imports. Supplies are at their peak during the first four or five months of the year, then there is a sudden fall in May or June followed by a decline in imports to their lowest point in September or October. In October or November the United States' new season's crop becomes available and imports immediately return to a high level.

The United States is, as would be expected, the major supplier of grapefruit in every month of the year. South Africa supplies the market from June to September or October (as in 1966) and Cuba from October to December. Small quantities are received from Hong Kong in the months October to February, and from Jamaica chiefly during the winter and early spring months, February to May. Mexico sends sporadic shipments, which were quite heavy in October and November 1968.

German Federal Republic

German imports of fresh grapefruit amounted to less than 2,000 tons before the War and it was not until 1955 that imports began to increase, as trade restrictions were lifted. In the period 1957 to 1959 grapefruit imports averaged 19,050 tons and by 1968 imports had reached 73,230 tons - a 284 per cent increase over the 1957/59 level (see Table VIII of Appendix D). However the rate of increase has slackened somewhat since 1966.

The pattern of supply has changed considerably over the last decade. In the years 1957 to 1959 the United States was the major supplier to this market, accounting for 43 per cent of the total, followed by Israel with 36 per cent and Spain with 7 per cent. However in 1967 Israel supplied 50 per cent of the total, South Africa (whose exports to Germany were negligible in 1957/59) 18 per cent, Cyprus (also a very minor supplier in 1957/59) 12 per cent, while the United States accounted for only 6 per cent. Supplies from the United States fell in absolute terms over the period under review and in 1968 (following Israel's devaluation) amounted to less than 750 tons. In 1968 Israel supplied 64 per cent of German imports.

Figure 4a

Grapefruit Monthly imports into Canada 1966-68

Source: Trade of Canada, Dominion Bureau of Statistics

Note: Columns show total imports, largely from the United States. Figures show totals from other countries (see Fig. 4b).

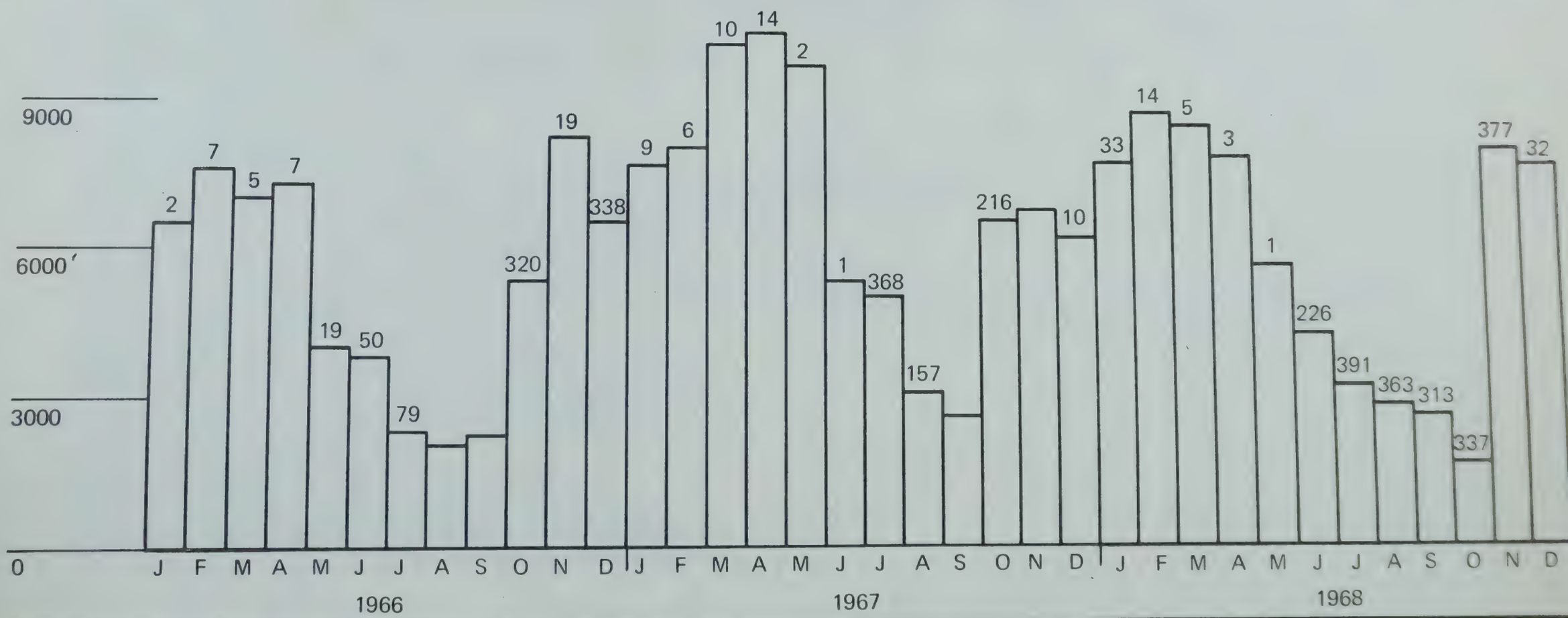
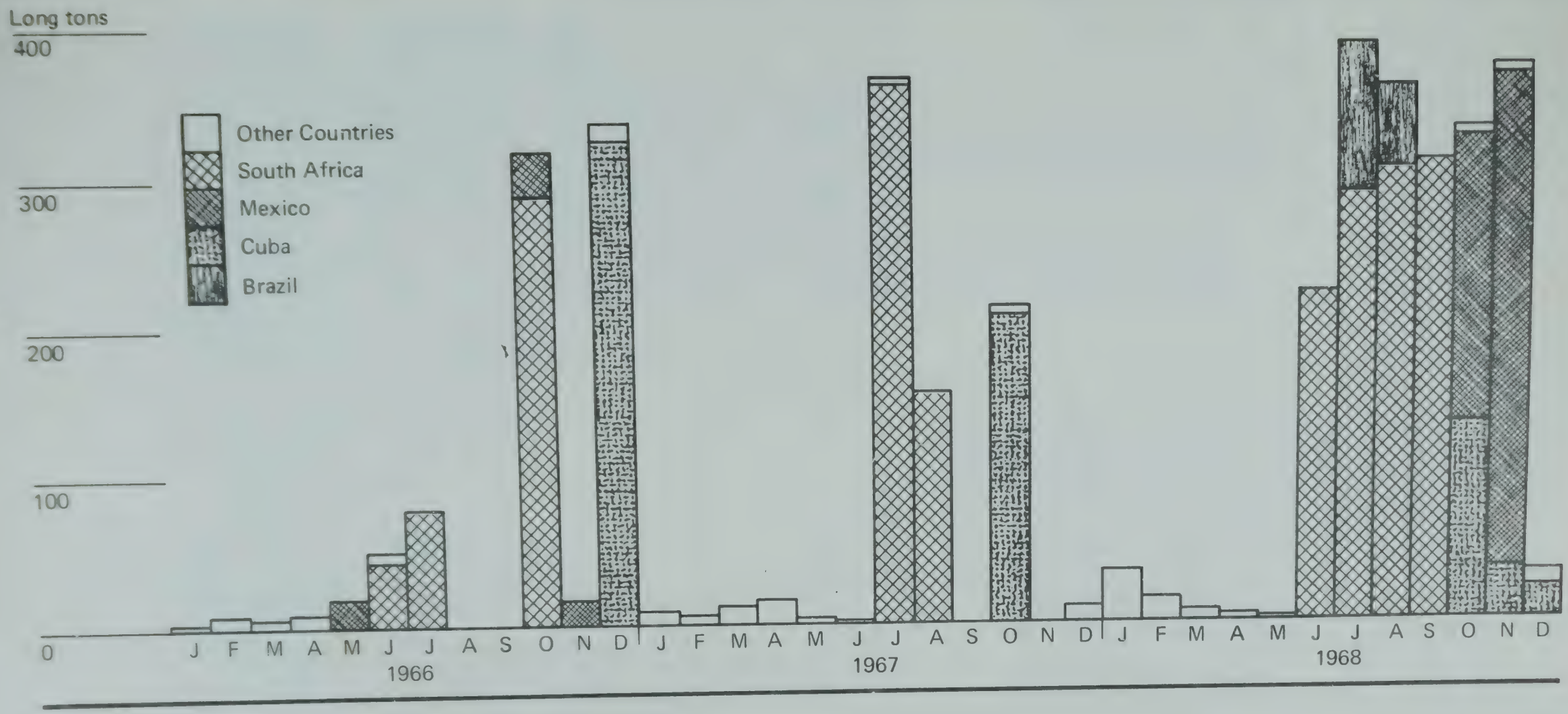


Figure 4b

Grapefruit Monthly imports into Canada from countries other than the U.S.A. 1966-68

Source: See Figure 4a



Minor suppliers to the German market include Spain, Turkey, Algeria and Morocco among Mediterranean producers, Brazil and Paraguay and also many of the Caribbean countries - the Honduras Republic, Jamaica, Trinidad, Surinam, and in 1967 and 1968, Cuba. Generally speaking the minor supplying countries are not increasing their exports to Germany and therefore have a declining share of the market.

The seasonal distribution histograms (Fig. 5) again show a peak during the spring months February to May and a lower level of imports from June or July until December. Imports are at their lowest in September. Israel now supplies this market from October or November until June or July - in 1968 August and September were the only 2 months that Israel did not dominate the German market. Cyprus grapefruit is received from November until April and Spanish chiefly in October and November, although small quantities continue to be received until April. South Africa is an important supplier from May to October and usually dominates the market from July to September. Small quantities of grapefruit are received from the United States and the Honduras Republic throughout the year.

France

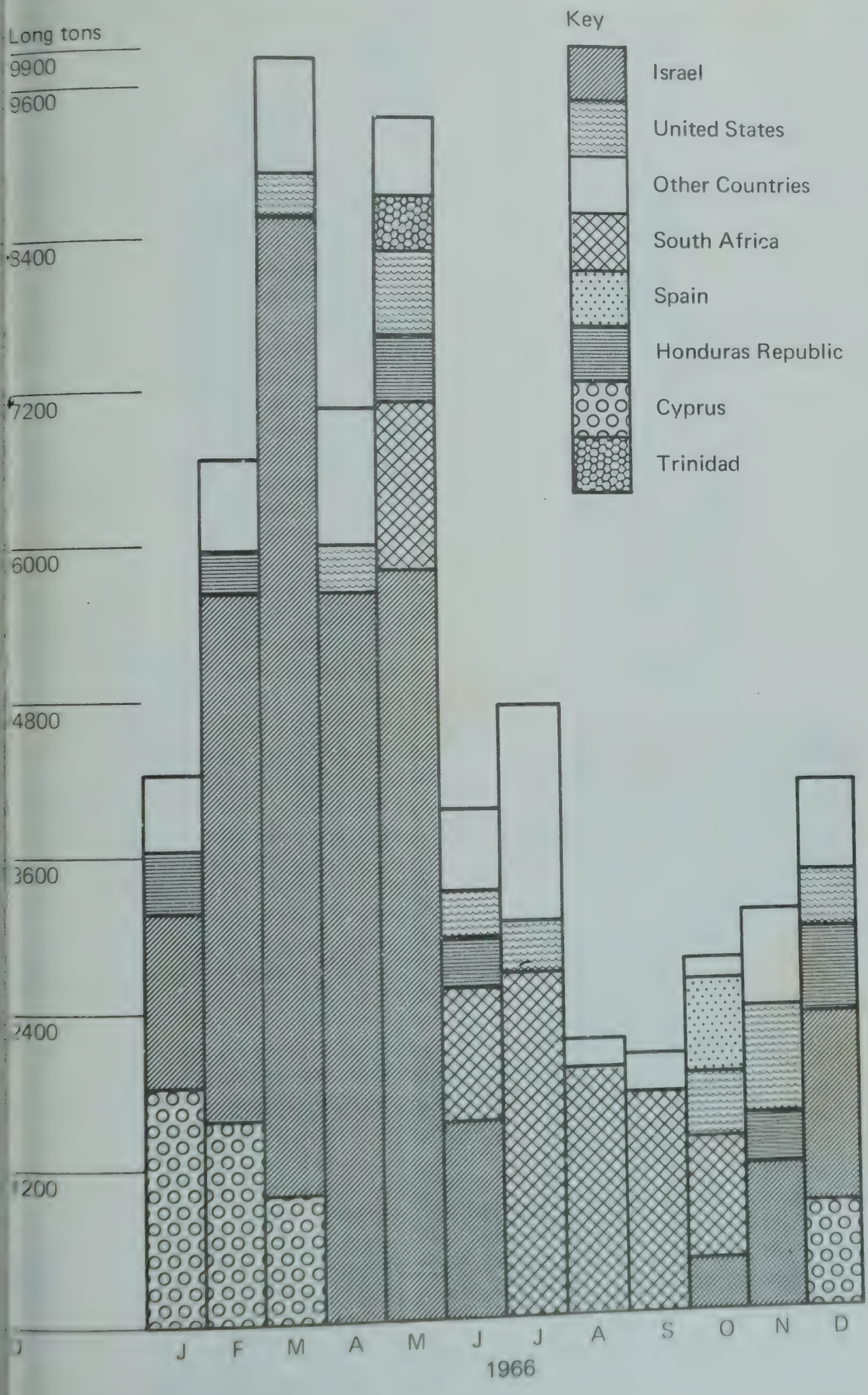
French imports of fresh grapefruit have also risen strongly during the period under review from an average of 17,250 tons in 1957/59 to 53,125 tons in 1968 - a 208 per cent increase (see Table IX of Appendix D). At the beginning of this period Israel, Morocco and Algeria supplied 41 per cent, 30 per cent and 16 per cent respectively of French grapefruit imports. However by 1967 the main suppliers were Israel (50 per cent), the United States (21 per cent) and South Africa (14 per cent), while Morocco and Algeria accounted for 5 per cent and 3 per cent respectively. In 1968 the market shares changed considerably - Israel alone supplied the 15 per cent increase in imports, while receipts from the United States and South Africa fell (possibly affected by the disturbances of May 1968 in France). The market shares in 1968 were Israel 69 per cent, the United States and South Africa both 9 per cent. Imports from Morocco and Algeria were also much lower, but Egyptian (Gaza) grapefruit accounted for 2 per cent of the total.

France is probably the only European market where the United States increase her market share over the period 1957 to 1967. It should also be noted that Cyprus and Spain are of little importance, in spite of their relative proximity to France. Minor suppliers to the French market included in 1968 the Hondura Republic, Surinam, Trinidad and even Sierra Leone and Australia.

Unfortunately seasonal import data is available only on a quarterly basis prior to 1968 and this tends to obscure the seasonal pattern of imports. In addition the seasonal distribution of imports in 1968 was almost certainly affected by the strikes in May and June of that year. However the histograms

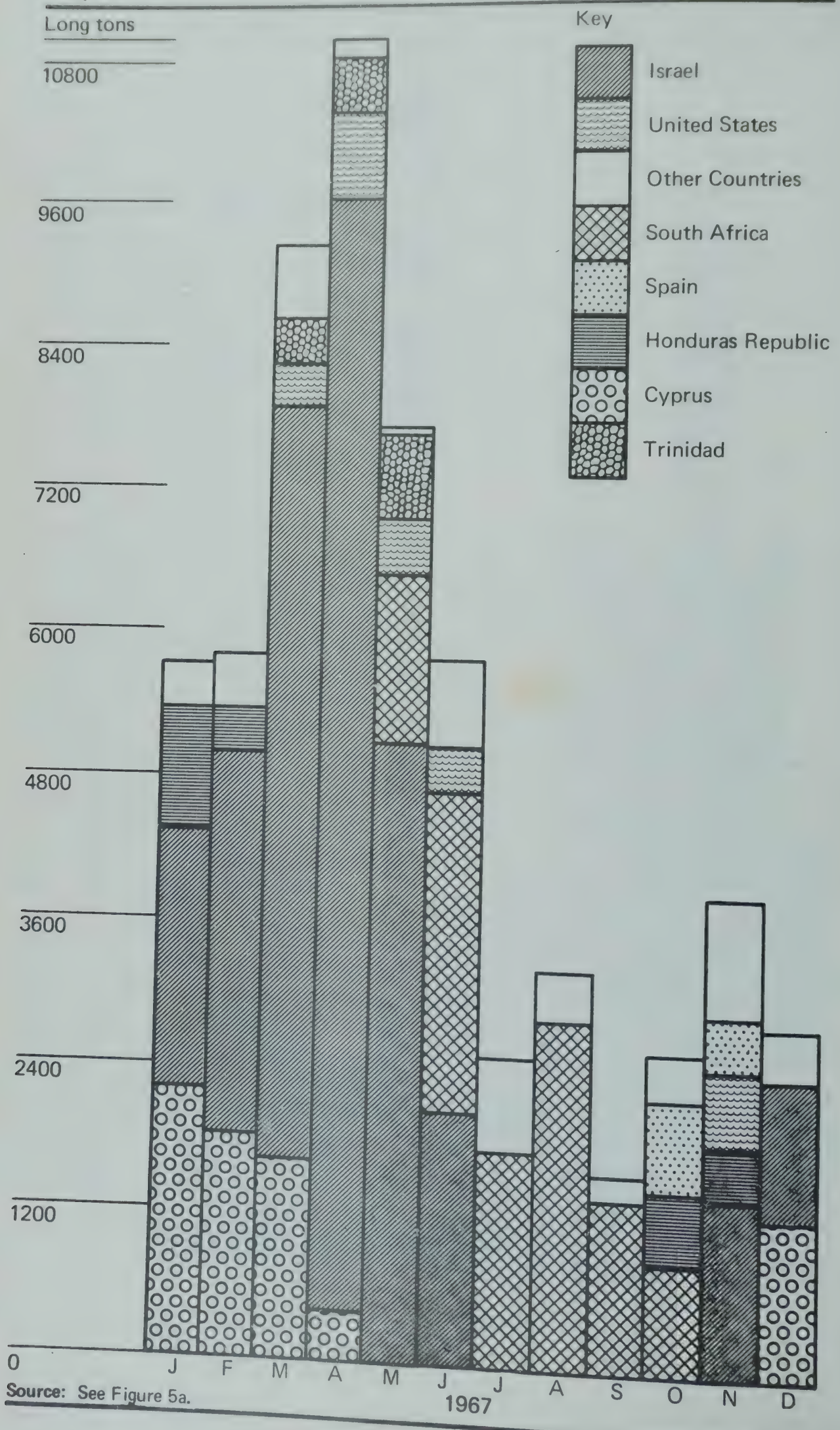
Figure 5a

Grapefruit Monthly imports into German Federal Republic 1966



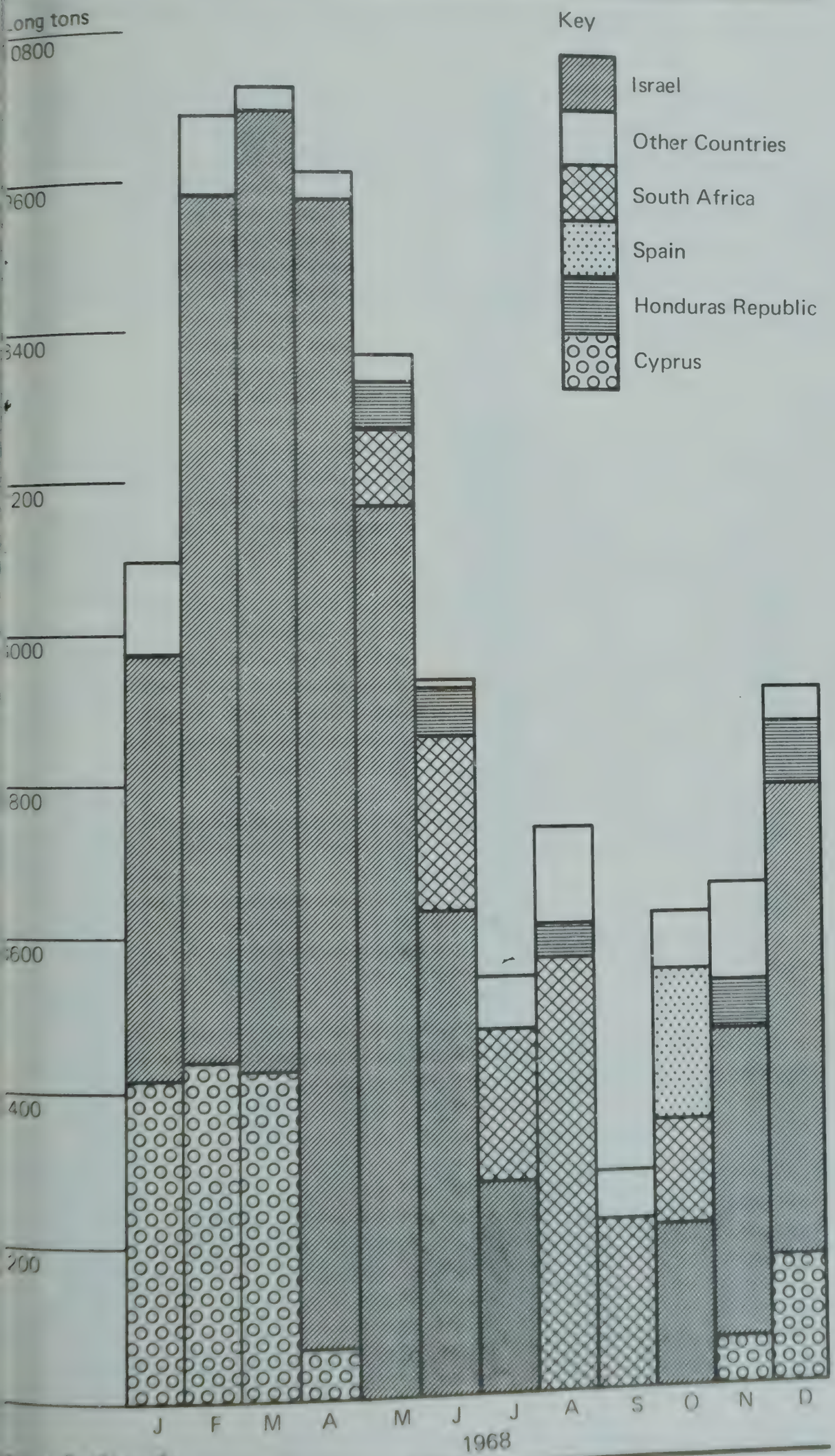
Source: Du Aussenhandel, Statistisches Bundesamt

Figure 5b
Grapefruit Monthly imports into German Federal Republic 1967



Source: See Figure 5a.

Figure 5c
Grapefruit Monthly imports into German Federal Republic 1968



Source See Figure 5a.

(fig. 6) show that imports are highest during the period January to June - probably reaching a peak in March and April. Imports are at their lowest during the months July to September. It should be noted that for 1966 and 1967, the histograms show average monthly imports for each quarter and not quarterly totals.

Israel dominates the French market during the first quarter, and frequently, also during the second. Other suppliers during the first quarter include most of the Mediterranean producers, together with the United States and Surinam who both supply the French market throughout the year. Imports from South Africa and in 1966, Mozambique, are important during the second quarter and continue into the third, when Cuba and Honduras have also contributed supplies. The final quarter marks the beginning of the new Northern hemisphe season, dominated by Israel, although imports are received from most supplyi countries during this period.

The Netherlands

After a relatively slow increase in grapefruit imports during the immediate post-War period, demand increased rapidly over the period under review, from 4,733 tons on average during 1957/59 to 20,720 tons in 1968 - a rise of 338 per cent (see Table X of Appendix D). At the beginning of the period the Netherlands, like Germany and Belgium, imported a high proportion (43 per cent) of her grapefruit requirements from the United States, the other important suppliers at that time being Israel (26 per cent) and Surinam - a former dependency (23 per cent). However imports from the United States rose very little, while Israel's share of the market increased dramatically, particularly in 1968, after her devaluation. In 1968 the major suppliers to the Dutch market were Israel (54 per cent), Surinam (13 per cent), the United States (12 per cent) and the Honduras Republic (6 per cent). Minor suppliers included Cyprus, Brazil, Spain, Paraguay and Cuba. It should be noted that significant quantities of grapefruit are on-shipped from Belgium to the Netherlands, and that in some years re-exports from the Netherlands are quite substantial.

The seasonal distribution histograms of imports during 1966, 1967 and 1968 (Fig. 7) show the usual high level of imports during the winter and spring months and a low level from July to October, imports usually being at their lowest in August. However imports during the July to October period rose over the period 1966 to 1968 and in the latter year in particular the difference between winter and summer levels of imports was less pronounced than in other importing countries.

As in most other European countries, Israel is the major supplier of grapefruit from October or November until June or July. Spain and Cyprus supply the market from October until December, and the United States from April until December. Honduras is of importance chiefly from May to July and from

Figure 6

Grapefruit Monthly imports into France 1966-68 (quarterly data only available 1966 and 1967)

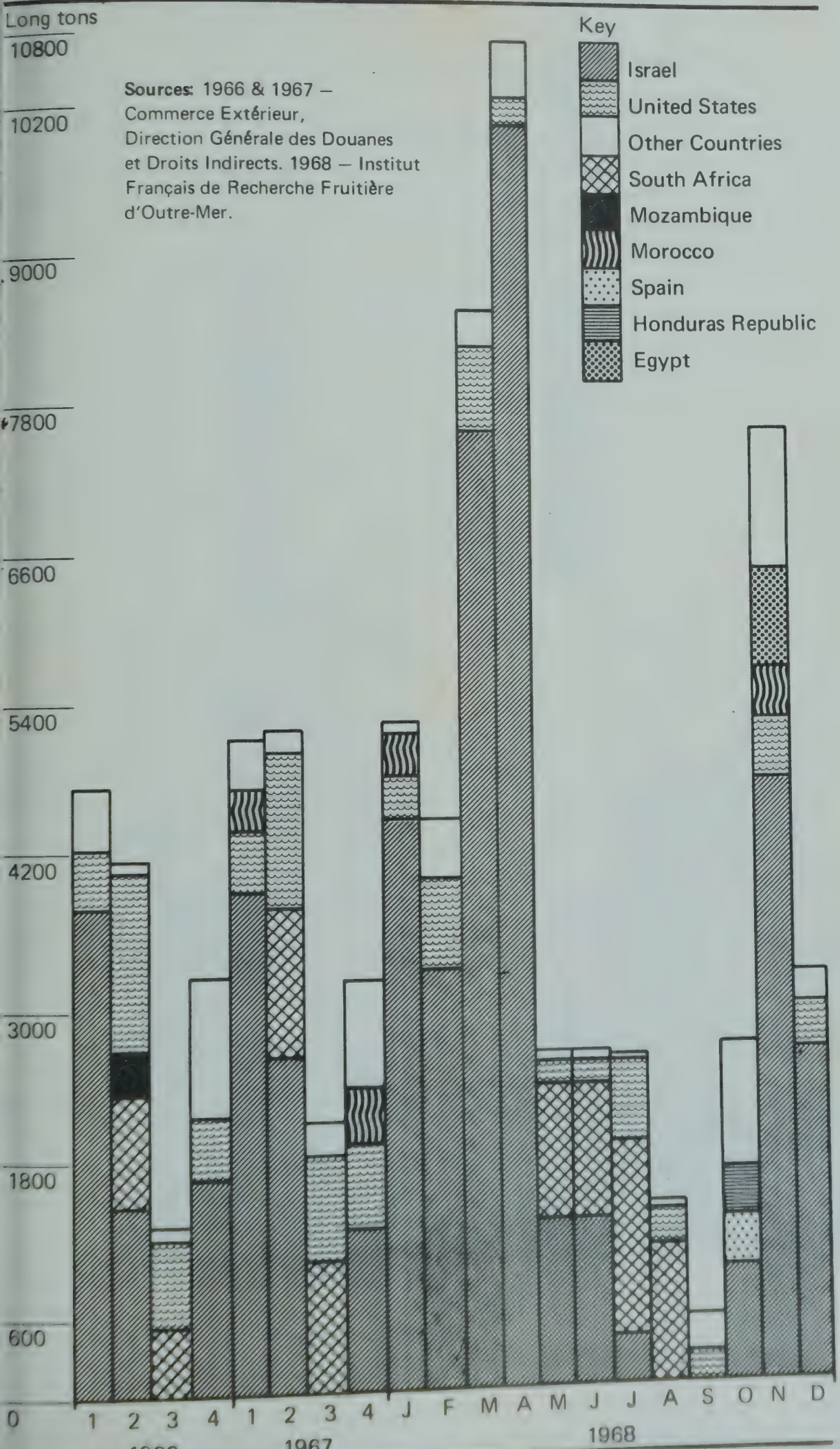
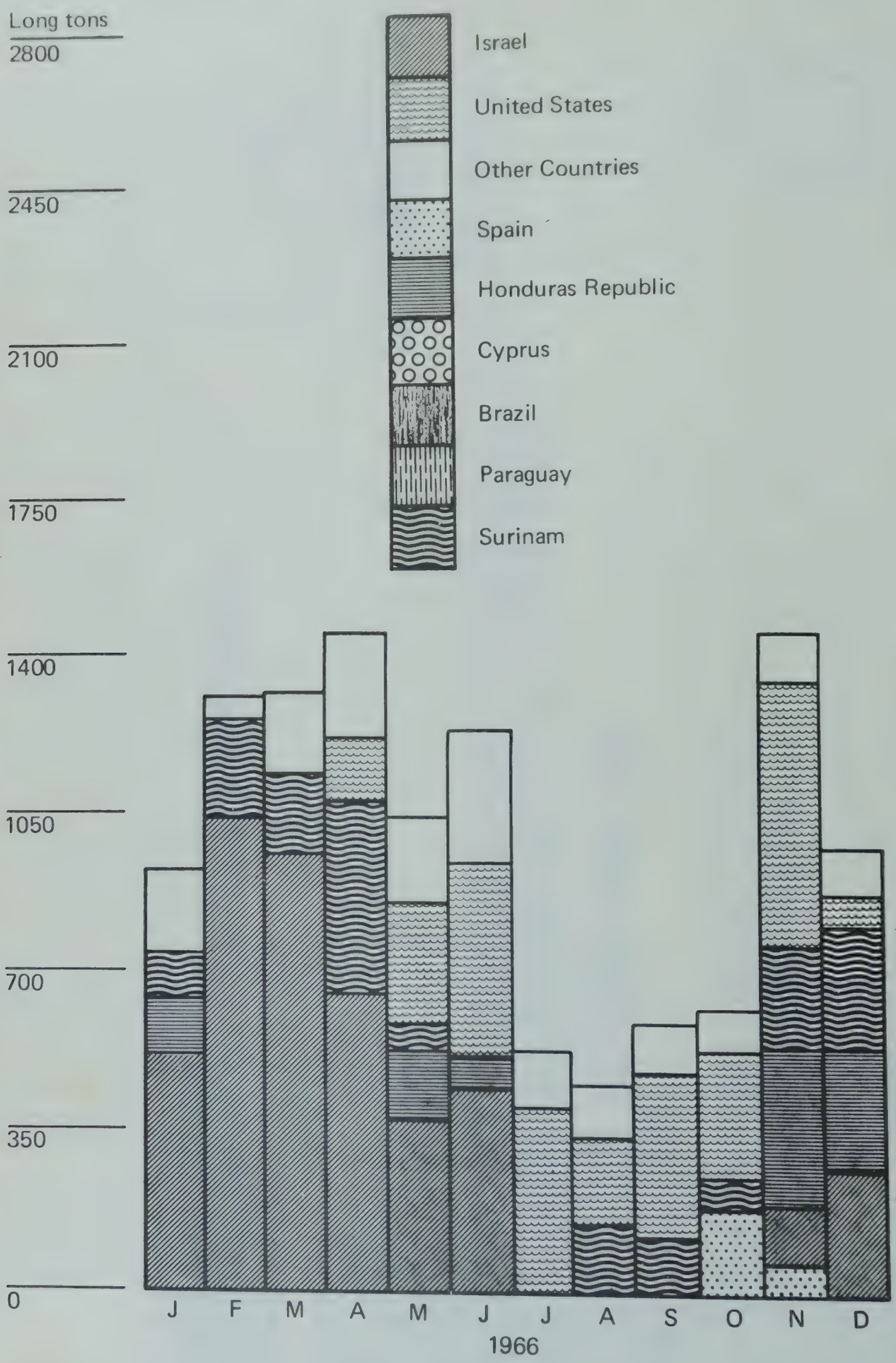


Figure 7a

Grapefruit Monthly imports into the Netherlands 1966

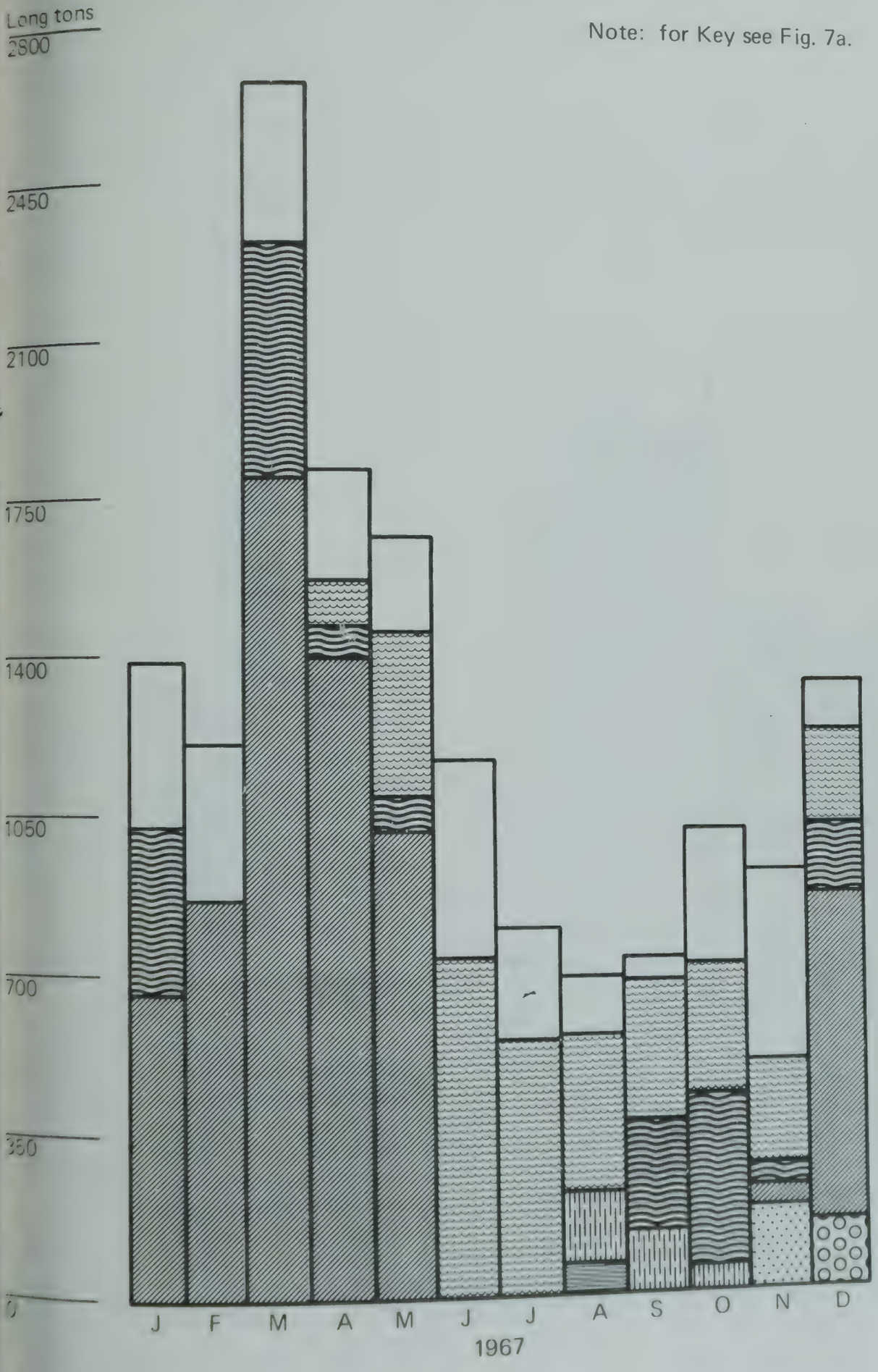


Source: Maandstatistick van de In-Uit-Voer
Centraal Bureau voor de Statistick.

Figure 7b

Grapefruit Monthly imports into the Netherlands 1967

Note: for Key see Fig. 7a.

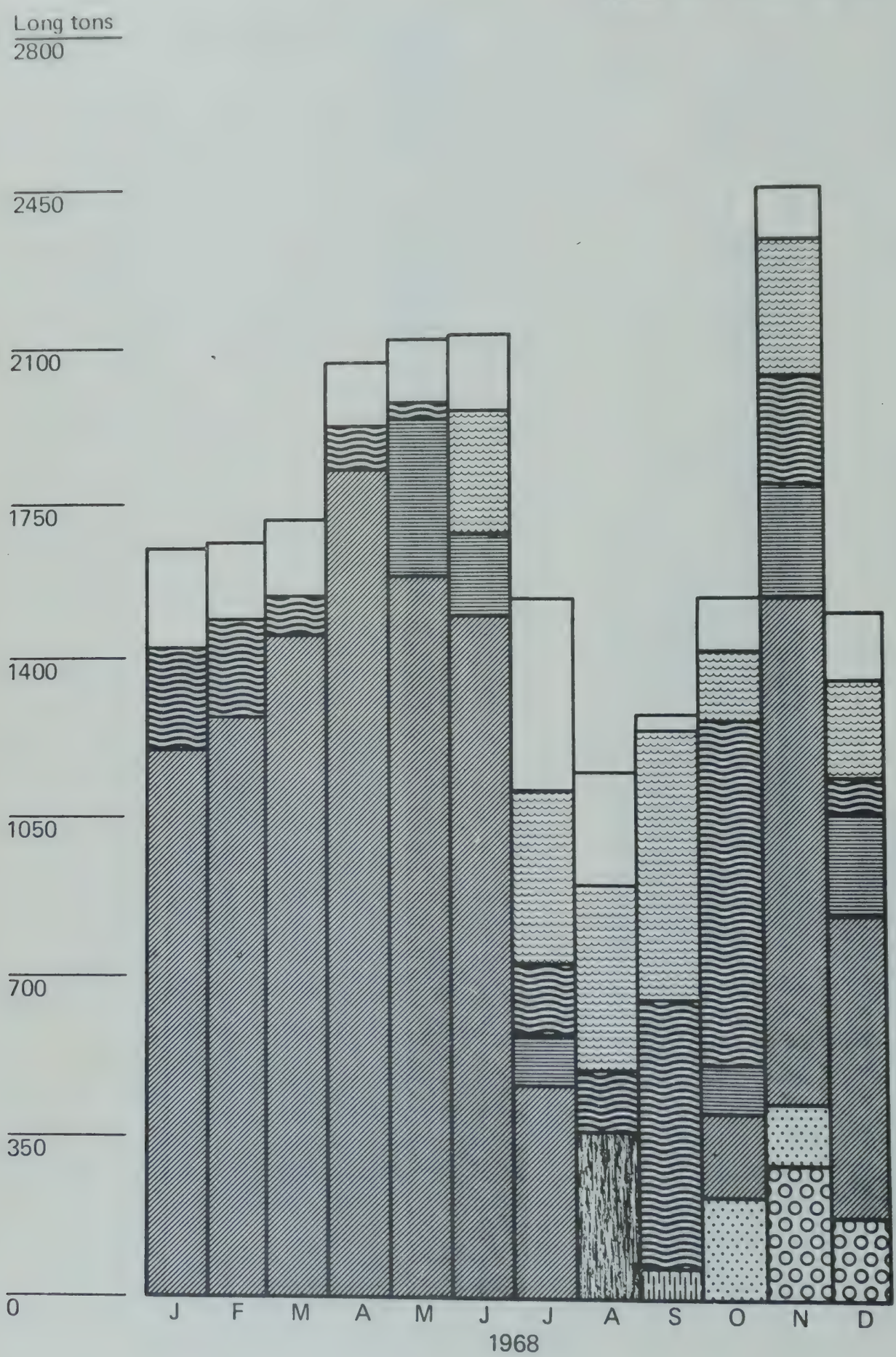


Source See Fig. 7a

Figure 7c

Grapefruit Monthly imports into the Netherlands 1968

Note: for Key see Fig. 7a.



Source: See Fig. 7a.

October until December. Surinam supplies the Netherlands' market throughout the year, although only small quantities are available from this source in June.

Belgium/Luxembourg

Before the Second World War this country was the largest market for fresh grapefruit in Continental Europe, importing 8,800 tons in 1938, in spite of its relatively small population. However post-War consumption of grapefruit did not recover to the 1938 level until 1965. Over the period 1957-59 to 1968 imports rose from an average of 6,215 tons in 1957/59 to 11,880 tons in 1968, an increase of 91 per cent (see Table XI of Appendix D).

Unfortunately the Belgian Trade Returns do not show the minor supplying countries. Israel has been the major supplier throughout the period, accounting for 42 per cent of supplies in 1957/59 and for 73 per cent in 1968. The other major supplier is the United States, whose share of the market fell from 42 per cent in 1957/59 to 25 per cent in 1967 (imports from the United States are not shown separately in 1968). Until 1965 at least, substantial quantities of grapefruit were received from the Netherlands (6 per cent of the total in 1965) and from 1966 to 1968 a large proportion of grapefruit received from "other countries" was imported from other EEC countries.

The seasonal distribution histograms for imports during 1966, 1967 and 1968 (Fig. 8) show a strong peak during the spring months, March and April, in 1966 and 1967 although in 1968 imports were at their highest in May. Imports are at a relatively low level from July until December, being at their lowest in October. Israel dominates this market from November until May or June. The United States was an important supplier during September, October and November in 1966 and 1967, and probably accounted for a large proportion of the "other countries" supplies during the earlier months of 1966 and 1967 and perhaps also in 1968.

Switzerland

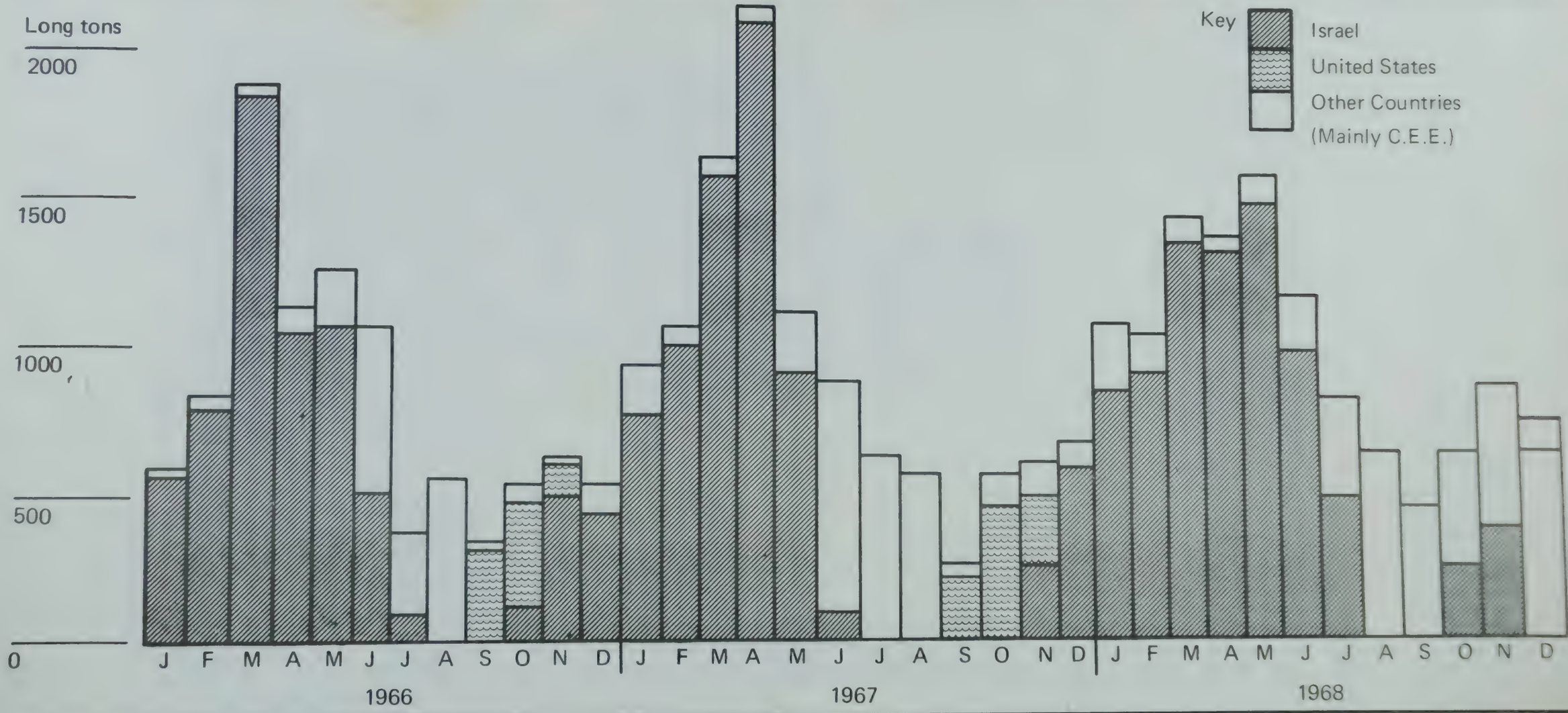
Swiss imports of grapefruit showed a gradual increase in the post-War period but the rise in imports over the period 1960 to 1968 amounted to only 37 per cent and did not show a steady upward trend - in fact imports were higher in 1967 than in 1968 (see Table XII of Appendix D).

Israel was the major supplier of the Swiss market throughout the period under review, accounting for 71 per cent of imports in 1960/62 and for 74 per cent in 1968. In 1960/62 the United States supplied 18 per cent of the market and South Africa 5 per cent, whereas in 1968 imports from the United States (which were considerably lower than in previous years) accounted for only 3 per cent of the total, imports from South Africa for 9 per cent, while imports from Cyprus supplied 11 per cent of the market. Minor suppliers include Spain, Brazil and Mozambique.

Figure 8

Grapefruit Monthly imports into Belgium/Luxembourg 1966-68

Source: Commerce Exterieur L'Institut National de Statistique



The histograms of monthly imports for 1966, 1967 and 1968 (fig. 9) show a very low level of imports during the summer months (May or June to September or October) following a peak during the spring months (February to April). Israel is the major supplier during the winter months, October or November until April or May, while Spain contributes small quantities from October to December and Cyprus is an important supplier from November until January. During the summer months, May to September, South Africa and the United States supply the market, and Brazil was also of some importance in 1966 and 1967.

Italy

Italy is a minor producer of grapefruit: production amounted to 685 tons in 1967. Italian imports of grapefruit were negligible during the early years of the period under review, as the result of strict phyto-sanitary regulations which virtually limited suppliers of grapefruit to Somalia and Tripolitania (Libya). In 1957/59 Somalia supplied 99 per cent of the average 154 tons imported annually, and 78 per cent of the 313 tons imported in 1963. However since 1964 agreements have been concluded with various other exporters of grapefruit, including Israel, Venezuela, South Africa, Surinam, Cyprus and Morocco (see page 55). In 1964, 686 tons of grapefruit were imported, and in 1968, 6,498 tons - an increase of 847 per cent over four years (see Table XIII of Appendix D).

The latest year for which detailed statistics are available is 1967, when Israel supplied 67 per cent of imports, South Africa 25 per cent, Somalia 3 per cent and Venezuela 2 per cent. In 1968 Israel increased her share of the market to 83 per cent.

The Italian phyto-sanitary regulations which limit importation of grapefruit from certain countries to various periods of the year, obviously affect the seasonal distribution of imports (see page 55). Quite part from this, Italian imports were subject to wide fluctuation from month to month in 1967 and more particularly in 1968 (see Fig. 10). Two possible explanations for these fluctuations are - in the first place, once an unusually large consignment of fruit has been received, import requirements for the following month will be reduced; secondly, a large consignment may be destined, in whole or part, to be re-exported to other European countries.

Scandinavia

The four mainland Scandinavian countries (Denmark, Finland, Norway and Sweden) import relatively small quantities of grapefruit considering the size and wealth of their populations (a total of 11,670 tons in 1967). Moreover the rate of increase of imports over the period 1957 to 1967 was less than that in many other European countries, being 101 per cent in Denmark, 129 per cent in Finland, 87 per cent in Sweden and only 34 per cent in Norway. Imports into Denmark, Sweden and Norway fell in 1968, possibly as the result of reduced supplies from the United States - one of the major suppliers to the Scandinavian countries.

Figure 9

Grapefruit Monthly imports into Switzerland 1966-68

Source: Statistique de la Suisse, Bureau Federal de Statistique

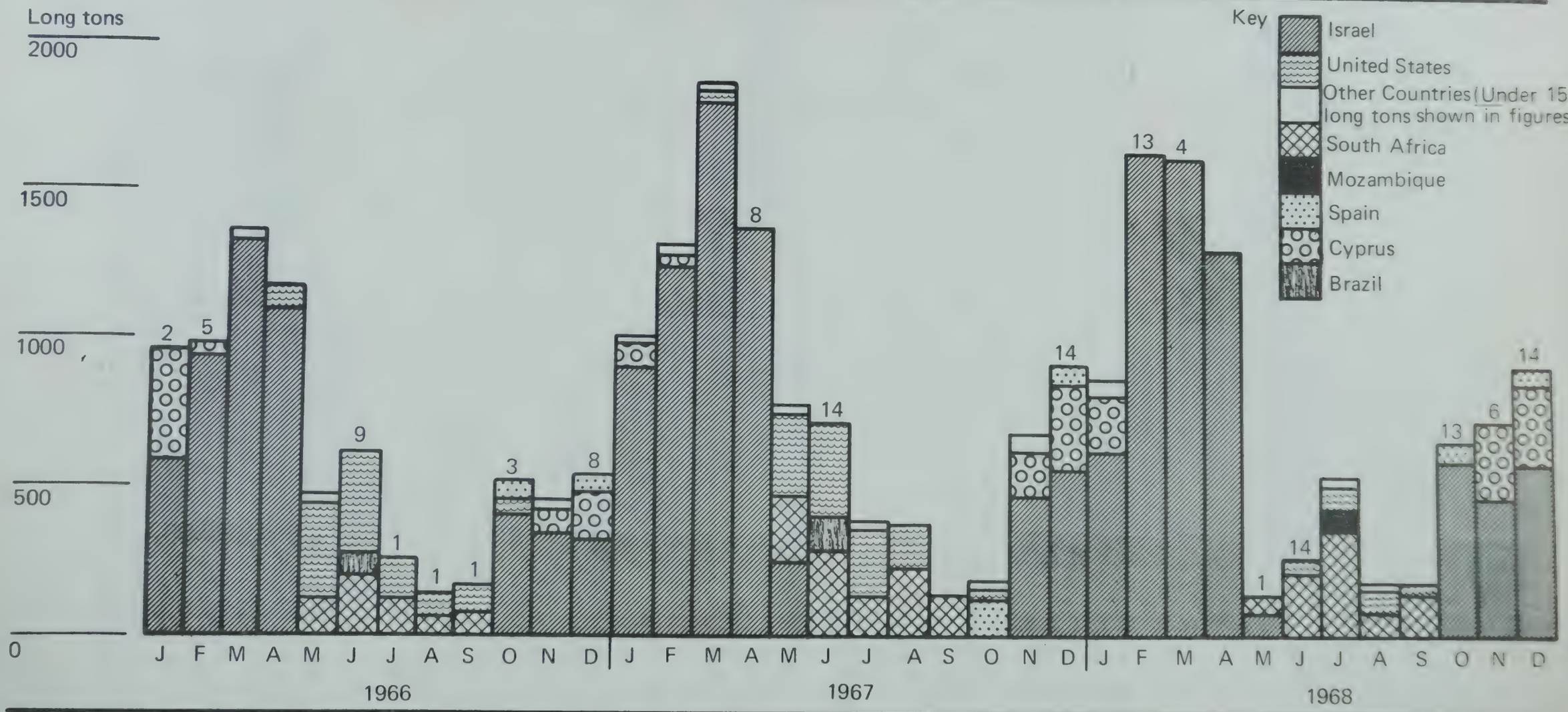
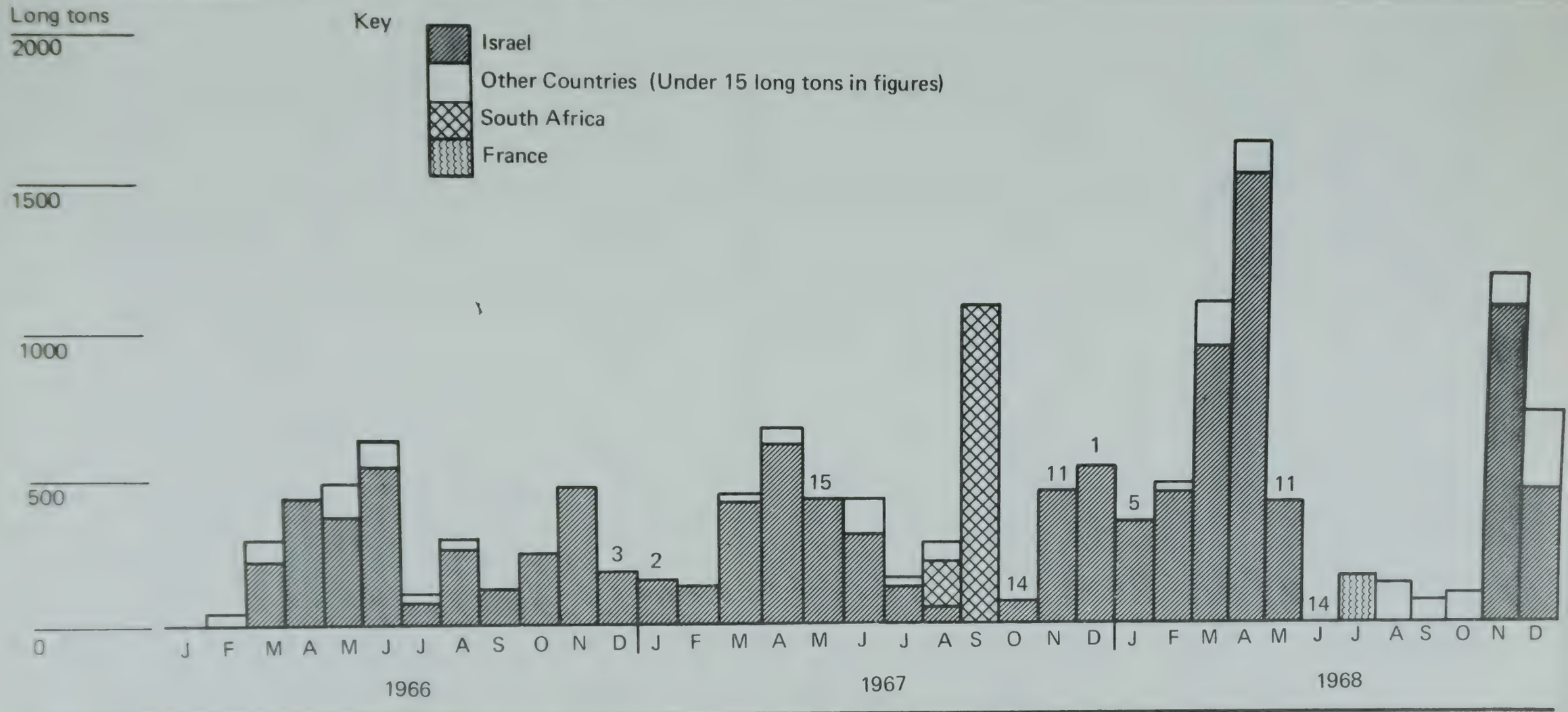


Figure 10

Grapefruit Monthly imports into Italy 1966-68

Source: Comercio con L'Estero Instituto Centrale di Statistica.



Israel was the most important supplier of grapefruit to all four countries in 1967, accounting for 50 per cent of imports into Denmark, 77 per cent in Finland, 55 per cent in Sweden and 45 per cent in Norway. The United States was the second supplying country for Denmark, Norway and Sweden, accounting for 14 per cent, 32 per cent and 36 per cent respectively of these countries' imports in 1967, but for only 6 per cent of Finland's imports. South Africa was the other important supplying country, and in 1967 supplied 6 per cent of Danish imports, 15 per cent of Finnish, 15 per cent of Norwegian and 3 per cent of Swedish imports. Only Denmark imports significant quantities of grapefruit from Cyprus (10 per cent of the total in 1967) and from the Caribbean the Honduras Republic has been an important supplier of this market since 1964 and in 1967 supplied more than 11 per cent of Danish imports.

Unfortunately monthly import data are available only on a gross basis for Denmark, Norway and Sweden although a quarterly break-down by supplying country is available for Sweden. No monthly or quarterly import data is available for Finland. The monthly import figures show the usual seasonal pattern with a peak in February and March and a low level of imports during the summer months with imports being at their lowest in September and October. The Swedish quarterly figures show that imports from Israel are at their peak during the first quarter, while the United States is a major supplier throughout the year and South Africa and Brazil supply the market during the second and third quarters. In 1968 small consignments were received from British Honduras, the Honduras Republic and Cuba during the final quarter.

Quality and Packaging Requirements In International Trade

Quality Factors

The principle criterion of the quality of grapefruit is firmness. The skin should yield slightly when handled, but it should not feel soft or pulpy. In addit the fruit should be well-rounded and not pointed and the skin should be unblemished and have a bright colour - greenish-coloured fruit generally sell at a discount on European markets. The flesh should be juicy and not too acid, and it is an advantage if the rind is thin.

Many producing countries have minimum standards of maturity below which the fruit should not be harvested. These standards are based on the total solids content of the juice and the ratio between this and its acidity. Details of the maturity standards operating in Florida as published in the State of Florida Citrus Fruit Laws are given in Appendix C of this report. Immature grapefruit should never be exported since consumers could be adversely influenced against the fruit.

The United Nations Economic Commission for Europe has prepared a European Standard for citrus fruit moving in trade between European countries which is set out in the appendix of this report. This sets a minimum juice content of 35 per cent for grapefruit and prohibits the importation of grapefruit smaller than 70 mm in diameter. Greenish-coloured grapefruit are permitted providing they meet the minimum juice content requirement (see Appendix A).

Generally speaking the pink and red-fleshed grapefruit varieties are not well-known on European markets and meet with considerable consumer resistance in some countries, in spite of their popularity in North America, where their flavour is considered outstanding. Nevertheless, in recent years American exporters have established outlets for red-fleshed grapefruit in Sweden and Germany where certain buyers will pay a premium for this fruit.

On the whole desert-type grapefruit meet the requirements of European markets better than tropical-type fruit, particularly as regards unblemished skin and long shelf-life (at least a month in the importing country is the ideal). However there appears to be little prejudice against tropical grapefruit in the Netherlands and in recent years a distinct market for this type of grapefruit has been developed in France and Germany.

Harvesting and Packing

In many countries the time of harvesting is determined by maturity tests on the fruit (as mentioned above) which are frequently carried out by government inspection services. However the acidity of grapefruit may be reduced, and hence the time of harvest be brought forward by one to two months, by use of lead arsenate sprays about four weeks after bloom (36). This is common practice in Florida and trials in Trinidad using lead arsenate in a concentration of 1 lb. to 100 gallons of water have shown that earlier harvesting is also possible under tropical conditions. The use of lead arsenate sprays on grapefruit does not seem to affect the quality of the fruit adversely, although the quality of oranges and tangelos can be drastically reduced by the use of such sprays.

The fruit should be carefully clipped from the tree and gently handled during all harvesting and packing operations. It has been found that tropical-type fruit, especially that grown in coastal regions and on old trees, is very susceptible to bruising, particularly towards the end of the harvesting season and this increases the incidence of blossom-end-clearing or water-logging. (37)

Grapefruit for export should be carefully graded for size and quality. Grading standards vary a good deal from one country to another, but producers exporting to European countries are increasingly using the European Standard for imported grapefruit (see Appendix A) as a basis for their export grades. This means that there are two basic quality grades (classes I and II of the European Standard) and nine size grades, ranging from 70 to 75 mm diameter to 114 to 122 mm diameter. The Standard also covers packaging and presentation of grapefruit and marking on the packages.

In fact the different sizes of grapefruit are usually referred to by the "count", or average number packed in a standard box. The most favoured counts on European markets are 40, 48 or 56 per 15 Kg container although buyers in the United Kingdom will take fruit as large as 32 or 27 per 15 Kg container and buyers in the Netherlands will take fruit as small as 64 or 75.

It is usual to protect grapefruit for export from attack by moulds by treating them with a fungicide such as diphenyl or sodium ortho-phenylphenol (SOPP). Diphenyl (or biphenyl) is the chemical most widely used for this purpose - the fruit may be wrapped in diphenyl-impregnated tissue, or impregnated pads of paper may be placed in the box or carton. The chief disadvantage of diphenyl is its rather unpleasant odour. Importing countries restrict the quantities of diphenyl residue on imported fruit - the maximum permitted levels are 100 ppm in the United Kingdom, United States and many other importing countries and 70 ppm in member countries of the EEC. The lower level permitted in EEC countries does not always provide sufficient protection against fungal attack.

SOPP is used chiefly on citrus intended for consumption in the producing country (the main users are the United States and Australia). This fungicide can be applied as a spray or dip, but like diphenyl has a rather unpleasant odour. The maximum permitted residue level on citrus fruit is 70 ppm.

Another chemical which has been used as a citrus fungicide in Australia is thiabendazole (TBZ). This has the advantage over diphenyl and SOPP of being odourless and simple to apply in solution as a spray or dip. At present exporting countries are conducting trials to determine whether the maximum residue level of 2 ppm permitted in most Western European countries and the United States will give sufficient protection under commercial conditions. The use of TBZ as a fungicide is not yet permitted in the United Kingdom.

Grapefruit are sometimes waxed to reduce desiccation and maintain their fresh appearance.

At the beginning of the harvesting season when the fruit is mature but not yet fully coloured the fruit may be degreened by the use of ethylene gas at a temperature of 85°F (29.5°C). This process is normally carried out before waxing. Alternatively, Florida grapefruit has been shipped unwaxed at 60° to 70°F (15.5° to 21°C) and it was found that the fruit degreened naturally during a three-week voyage (38). The use of colouring agents is prohibited for fruit sold on European markets.

Both fibreboard cartons and "Bruce" boxes (wooden wire-bound boxes) are used for the export of grapefruit. The old heavy wooden citrus case is no longer used in international trade. Cartons are favoured by most retail buyers because they cause fewer problems of disposal. However cartons have certain

draw-backs from the exporter's point of view in that their ventilation is poor, the fibreboard tends to absorb moisture and may collapse, and the humid atmosphere inside the carton encourages fungal growth. It is generally accepted that a consignment cannot consist solely of fruit packed in cartons because the latter do not have sufficient "stacking-strength" to be stacked to the top of a ship's hold. Thus in every consignment the lower layers of containers in the hold must be Bruce boxes. Where cartons are used the telescopic type are usually favoured for their greater strength.

In recent years there has been a trend towards the use of smaller containers for fruit as more fruit has been sold through supermarkets where female labour is widely employed. The most usual sizes of container for grapefruit are the 15 Kg (used in South Africa, Morocco, Jamaica and Dominica), the $16\frac{1}{2}$ Kg (used in California) and the 20 Kg container (used in Israel and Cyprus). The individual containers are frequently palletized to reduce unnecessary handling, but the lay-out of freight holds does not always permit palletization.

Grapefruit should be shipped in ventilated or refrigerated holds, in the latter case they are usually carried at 52°F (11°C). Rapid cooling of the fruit to their shipping temperature, helps to reduce waste and to maintain the quality of the fruit. However it has been shown that temperatures below 50°F (10°C) cause rind-pitting in Florida (tropical type) grapefruit. (38)

Refrigerated bulk containers have not yet been used commercially for shipment of grapefruit although a consignment of boxed oranges shipped in containers from Australia to Europe met with a very favourable response. Experiments in Florida and Texas also suggest that the use of controlled atmosphere storage (ie the atmosphere in the container has a low, controlled, oxygen level) prolongs the storage life of grapefruit. (39) Thus the commercial adoption of refrigerated, controlled atmosphere containers is a distinct possibility and could be used to extend the marketing seasons of the major suppliers of grapefruit even further. At present Israel and South Africa both employ cold storage in importing countries to extend their marketing seasons by four to eight weeks. However the trade has commented adversely on stored South African fruit which has on occasion suffered considerable wastage from stem-end and blossom-end rots.

Barriers to Trade

Tariffs, quotas and phyto-sanitary (plant health) regulations may limit, or indeed completely prevent trade in fresh fruit. However, generally speaking grapefruit is now subject to fewer restrictions on trade than many other fruits, although the United Kingdom's discriminatory quotas, and the Italian phyto-sanitary regulations still constitute substantial barriers to trade in grapefruit. In addition to tariffs many continental European countries levy a turnover tax on all goods, thus raising retail prices.

The EEC countries do not have a reference price system for grapefruit imports.

Tariffs and Internal Taxes

Table 3 shows the rates of duty and internal taxes levied on grapefruit imported into Western European and North American countries, as of Decembe 1969. It will be noticed that under the Kennedy Round of tariff concessions, import duties will be reduced considerably by 1972. Under these provisions grapefruit imported into the Scandinavian countries will be free of duty by 1972 and imports into the EEC countries will be charged a duty of 6 per cent ad valorem. Of the countries charging specific import duties only the United States is reducing the rate of duty. The ad valorem equivalents of the British and Swiss General Tariffs were about 7 per cent and 6 per cent respectively on average in 1967, but it is difficult to determine the equivalent rates for Canada and the United States since their trade statistics show values of imports in fob terms.

The exceptions to the General Tariff are of greatest importance in Canada and Switzerland since most exporting countries enjoy the British Preferential or Most Favoured Nation Tariffs in trading with Canada, or are members of GATT and thus qualify for the reduced rate of duty in trading with Switzerland. The British Commonwealth Preference affects a substantial proportion of grapefruit imports, but the free entry granted by the EEC countries to their respective former dependencies are of importance only to the Netherlands who imports a large proportion of her grapefruit requirements from Surinam. The exceptions to the United States' tariff are of little relevance at the present time since trade with Cuba has been suspended and the Eastern Bloc countries do not export grapefruit.

Internal taxes levied on grapefruit are highest in the Scandinavian countries and Belgium, particularly in the latter where the transmission tax amounts to 14 per cent of gross landed value. Provincial and State sales taxes in North America usually range from 3 per cent to 6 per cent of the retail price. In Switzerland and the United Kingdom most foodstuffs are exempt from internal taxation.

Quotas

Among the importing countries considered here only the United Kingdom imposes quotas on the importation of grapefruit. Imports from the Dollar Area (comprising the United States, Canada, the Central American countries, Haiti and Liberia) excluding Cuba, are permitted only from 1st December to 30th September (prior to 1968/9 only from 1st March to 30th September) and are limited to a value of £1,150,000 cif. In fact this quota has never been filled. There is a separate quota for imports from Cuba of $70,000 fob annually. Import licences are required for imports from these countries. The main purpose in retaining the Dollar Area quota is to protect the West Indian grapefruit industries from potential competition.

Tariffs and Internal Taxes Levied on Fresh Grapefruit in Selected Countries — Table 3*

Country	General Tariff	Kennedy Round Concessions	Exceptions to General Tariff	Internal Taxes
Canada	1 cent per pound	-	British Preferential and Most Favoured Nation Tariff - Free	Provincial sales taxes at retail level
Denmark	3 per cent ad valorem	Free of duty by 1.1.72	-	Value-added tax 12.5 per cent ad valorem
European Economic Community	9.6 per cent ad valorem Reduced to 7.2% ad valorem until 30.6.70	To be reduced to 6 per cent ad valorem by 1.1.72	Produce from Associated African and Malagasy States, overseas territories and former dependencies - Free	Belgium 14% of gross landed value France 7.52% of gross landed value Germany 5.5% " " " " Italy 6.4% " " " " Luxembourg 3% " " " " Netherlands 4% " " " "
Finland	4 per cent ad valorem	Free of duty by 1.1.72	-	Turnover tax 12.4% of import value
Norway	1.33 Kr. per 100 Kg. net	1.33 Kr. per 100 Kg. net	-	Sales tax 12% of retail price
Sweden	Free	Free	-	Value-added tax 11.11% ad valorem
Switzerland	5 fr. per 100 Kg. gross	-	G.A.T.T. tariff rate 3 fr. per 100 Kg. gross	-
United Kingdom	5s. 0d. per cwt. net	-	Produce from Commonwealth, South Africa and Burma - Free	-
United States	1. 8-30. 9. 1.1 cents per pound 1.10-31.10. 0.85 " " " 1.11-31. 7. 1.4 " " "	1.0 cents per pound 0.8 " " " 1.3 " " "	Cuba* / Eastern Block 0.3 c. per pound / 1.5 c. per pound 0.6 " " " / 1.5 " " " 1.2 " " " / 1.5 " " "	State sales taxes at retail level

*Suspended since 1961.

Phyto-sanitary Regulations

The phyto-sanitary regulations applicable to grapefruit imported into Western European and North American countries are summarised in Table 4 on page 55. Most importing countries require consignments of grapefruit to be accompanied by a general plant health certificate issued by the Plant Protection service of the exporting country to certify the consignments' freedom from dangerous pests and diseases, in particular the Mediterranean fruit fly. The purpose of these regulations is, of course, to prevent the introduction of pests and diseases into countries where they are not endemic. Even when a consignment is accompanied by a health certificate it is liable to be thoroughly examined by the plant health officers of the importing country, and if any infestation is discovered the consignment may be destroyed.

The Italian plant health regulations differ from the others in discriminating between exporting countries and allowing imports only at certain times of the year. In principle imports of citrus into Italy are banned, but individual exporting countries may apply for a waiver of the regulations during a part or the whole of the year and these waivers are renewed annually. Imports from certain countries, such as Morocco and Cyprus, are permitted only after fumigation in the country of export.

Several countries charge a fee for the phyto-sanitary inspection at the port of discharge. These charges are as follows:-

France	0.7 per cent ad valorem
Germany	D M 2.0 for 1 metric ton or less D M 1.20 for each additional ton or fraction thereof
Sweden	1.4 to 30.9 0.30 Knr per 100 Kg (minimum 12 Knr per consignment) 1.10 to 31.3 No charge

TABLE 4

Phyto-Sanitary Regulations for Imported Grapefruit in Selected Countries

Country	Regulations
Belgium	General Health certificate
Canada	No certificate required. Fruit must be packed in new containers
Denmark	No certificate required
France	General Health certificate
German Federal Republic	General Health certificate
Italy	Imports only permitted from:-
	Libya 1.10 to 31.3 each year
	Somalia) Venezuela) all year
	Israel 1.1 to 31.12, 1969
	South Africa 1.7 to 31.10, 1969
	Surinam 1.8 to 31.10, 1969
	Morocco*) Cyprus*) 1.10.68 to 31.3.69
	General Health certificate
	* each consignment to be disinfected with Methyl bromide under vacuum at place of origin
Netherlands	Health certificate required in respect of Mediterranean fruit fly (Ceratitis capitata)
Norway	General Health certificate
Sweden	Health certificate required in respect of Mediterranean fruit fly (inspection to take place not more than 15 days before despatch). Fruit must be packed in new containers
Switzerland	No certificate required
United Kingdom	No certificate required
United States	An import permit is required which will show whether or not a health certificate is required. All consignments are subject to inspection and disinfection on arrival.

PART III

MARKETS FOR GRAPEFRUIT

In this section the different market structures, demand patterns and price levels in the major world markets for grapefruit are discussed. On the whole the most important markets for grapefruit are the importing countries - the one exception is the United States - by far the largest market for grapefruit in the world. Although the United States is self-sufficient in that imports are negligible at present, this huge market can hardly be ignored and may give some indications as to future trends in consumption in European markets.

It should be noted that wherever prices have been converted to sterling an apparent 15 per cent rise occurs in 1968 values over those of 1967 as a result of the sterling devaluation towards the end of 1967.

The United States Market for Grapefruit

As might be expected, per capita consumption of fresh grapefruit is higher in the United States than in any other country (with the single exception of Israel) in spite of competition from processed grapefruit. The peak of fresh grapefruit consumption was reached just after the War: since that time grapefruit juice and canned or chilled segments have made inroads into the fresh fruit market. Nevertheless, after falling to a low of 6.4 lb per capita in 1963, fresh grapefruit consumption rose steadily to 9.0 lb in 1967 when supplies were unusually high and prices low, before falling again to 8.0 lb in 1968, when there was a short crop.

The size and geographical distribution of the United States' population contribute to the complexity of marketing grapefruit, which is chiefly produced in the extreme south-east of the country, whereas the main centres of population are situated in the north-east and on the west coast. Information concerning grapefruit marketing is available in a survey undertaken in 1961 by the Economic Research Service of the US Department of Agriculture, in eight terminal wholesale markets situated in the Central and Western States(40) This study found that the largest handlers of grapefruit, namely receivers (primary wholesalers), national and regional chain stores, and brokers, obtained their supplies from the production areas, either direct from the shipper, through their own salaried buyer (in the case of chain stores) or occasionally through a broker in a production area. Grapefruit was usually bought firm on an "fob production area" basis or on a "delivered" basis - consignment/commission sales were of relatively little importance. Substantia quantities of grapefruit handled by brokers did not physically move through the terminal markets but were diverted directly to buyers in smaller markets. There can be few importers who handle grapefruit in the United States but it is interesting to note that South African citrus has been marketed by a Florida citrus co-operative during the summer months.

The wholesale trade in fresh fruit in general is declining as the large chains take more of the retail market and buy their requirements direct from the shipping firms.

Chain stores are the major outlet for fresh grapefruit in the United States. Although national and regional chains maintain their own buyers in production areas, they purchase some of their requirements from wholesale firms in the terminal markets. Local chains obtain most of their requirements through the wholesale markets. Catering outlets are of little importance in the fresh grapefruit trade, since canned grapefruit segments and chilled or frozen juice are easier to serve than the fresh fruit. Individual retailers are now of little importance.

The major markets for grapefruit in order of importance in 1968 were New York City - Newark, Los Angeles, Pittsburgh, Chicago and San Francisco - Oakland (41). These markets serve the densely populated areas of the North Eastern states, Mid-West and California. Auctions are held in New York, Pittsburgh, Chicago and in several small markets in the north-east, by far the most important being the New York auctions. However auctions have been of decreasing importance in recent years and accounted for only 9 per cent of sales at terminal markets in the 1967/8 season (42).

On the American market fresh grapefruit competes chiefly with processed citrus products, both segments and juice, as a starter to a meal (chiefly breakfast), or as a quick snack. During the spring and early summer months there may be some competition from fresh berry fruits and during the late summer from melons. However domestic supplies of fresh grapefruit are very limited during the months June to September when demand is presumably met by canned grapefruit (it should be remembered that Florida grapefruit is not stored on a commercial basis for longer than a couple of weeks). Thus it appears that imported grapefruit might perhaps find a market during the late summer months, so long as exporting countries could meet the stringent American phyto-sanitary regulations, which hitherto have been the main obstacle to sales of imported citrus in the United States. The regulations vary according to the pests endemic in the producing areas. South African citrus fruit, for example, was only permitted entry after fumigation throughout the month-long voyage from South Africa to New York.

Prices and Margins

Detailed price data is available only for Florida grapefruit; average returns for Californian grapefruit are higher, particularly for summer fruit (43).

Prices paid for fresh grapefruit on the United States market are influenced chiefly by available supplies (crop forecasts are widely published in the United States). Thus average on-tree returns over the season were high in 1963/4 and 1967/8 ($2.62 and $2.52 per 85 lb box, respectively) when crops were short, and low in 1966/7 ($1.21 per box) when the crop was an unusually large one. However, the seasonal pattern of prices for Florida grapefruit does not always follow the pattern that might be expected ie high prices at the beginning of the season in October, followed by a fall to a low in February and March and possibly a recovery towards the end of the season in May and June. In fact this expected

trend of prices was followed in only two of the last five seasons (1964/5 and 1966/7). In the other three seasons prices rose steadily from October or November until the end of the season. This unusual price trend could be explained by the poor crops in 1963/4 and 1967/8 - prices rose as it became obvious that supplies would be limited. Although 1965/6 was not a short crop year, an unusually high percentage of the Florida crop was sold during the months October to December and a smaller percentage of the total crop than usual was sold on the fresh market (44).

As regards prices for grapefruit grown in other areas, although there is no monthly data available, it is reasonable to suppose that prices reach a peak in the months July to September when only limited supplies are available.

As might be expected, seedy grapefruit are sold at a discount on the fresh market, fetching between 20 and 30 per cent less than white seedless fruit (45). In fact seedy grapefruit is sold fresh only in the local markets in production areas. On the other hand pink and red-fleshed seedless grapefruit fetch a premium over white-fleshed fruit - up to 12 per cent on average in recent seasons (46). The American market generally prefers large grapefruit, the smaller sizes being exported or processed.

Prices at auctions in the main terminal markets average between two and three times the on-tree price per box (47) - a large proportion of this difference is accounted for by packing and transport costs. The highest average prices are obtained at Chicago, New York and Detroit auctions, but this may be because a larger proportion of high-quality and pigmented fruit is sold at these auctions.

The Canadian Market for Grapefruit

Per capita consumption of grapefruit is very nearly as high in Canada as in the United States and, not surprisingly, has followed the same trend in recent years, reaching 8.9 lb per capita in 1967.

The Canadian population is even more concentrated geographically than the American - a large proportion of the population live in the extreme south-east of the country, around the Great Lakes, with a smaller concentration on the West Coast. This distribution of population, however, facilitates the import of grapefruit from Florida in the East and from California and Arizona in the West. The largest terminal markets in order of importance are Toronto, Montreal, Vancouver, Winnipeg and Ottawa (48). All American grapefruit is received overland by rail or truck. Grapefruit imported by sea is received at the Eastern ports of Montreal and Toronto.

As in the United States, chain stores are the major outlet for fresh grapefruit and the wholesale markets are declining in importance.

Prices

Regrettably a wholesale price series is not available for grapefruit sold on Canadian markets. Import values shown in the Trade Returns are subject to the reservation that the values of some consignments may have been quoted in fob terms although it is assumed that cif terms are usually quoted by importers. Average import values for the last three years are shown in the table below:

	1966	1967	1968
		Shillings per cwt	
United States	44s	38s	61s
South Africa	34s	52s	57s
Cuba	40s	80s	54s
Mexico	47s	-	81s
Brazil	-	-	33s

Source: Trade of Canada, Dominion Bureau of Statistics

Values for imports from Jamaica cannot be calculated with any accuracy because of the small quantities involved; however these appear to be relatively high - of the order of 90s to 100s per cwt. These high values are the more surprising because Jamaican grapefruit arrive on the Canadian market during the spring months, when there are large supplies available from the United States. Mexican and Cuban fruit reaches the Canadian markets during the autumn months when prices may be expected to be relatively high. Brazilian and South African grapefruit, though available when supplies from the US are at their lowest, may have deteriorated in quality after a long voyage and also compete with summer deciduous fruit and berries.

The United Kingdom Market for Grapefruit

Grapefruit consumption on a per capita basis has always been higher in the United Kingdom than in any other European country with the exception of Switzerland. Consumption has exceeded 3 lb per head since 1964 and in 1966 actually reached 3.7 lb per head, although 1969 is certain to see a decline from this figure since supplies were unusually limited.

The primary wholesale markets in the United Kingdom are all situated within 100 miles of a port, many of them being situated at large ports, for example London, Liverpool, Bristol, Hull, Glasgow and Belfast. It is general practice for major exporters of grapefruit to use several ports of discharge and thus to minimise the inland journey by rail or truck. Labour troubles in the docks at London and Liverpool, in particular, have encouraged the use of small ports such as Sheerness and Cardiff which can guarantee the quick turn-round of a vessel.

Importers almost invariably handle grapefruit on a consignment/commission basis. Only large chain stores buy firm from the exporting countries or their agents. An increasing proportion of sales in the wholesale markets are made by private treaty, although auctions are still of some importance in Liverpool, Hull, Glasgow and Spitalfields Market (London). South African grapefruit is no longer auctioned and only small quantities of Israeli grapefruit are sold through the auctions.

The independent greengrocer is still an important outlet for grapefruit in the United Kingdom, particularly in the North and West of the country where chain-stores are not so numerous and tend to handle only the basic fruits and vegetables. However supermarket chains have become increasingly important outlets in recent years, particularly in London and the South East. At one time the high-class hotel and restaurant trade was a major outlet for grapefruit but the increasing acceptance of processed forms of grapefruit, which save labour and permit strict portion control, has reduced catering demand for the fresh fruit.

There is no demand for pink or red-fleshed grapefruit on the United Kingdom market except in the Blackpool area. In general pigmented grapefruit have to be sold at a discount on markets other than Liverpool, because the general public imagines the coloured flesh to be diseased - a large-scale advertising campaign would probably be necessary to eradicate this opinion. Similarly, the brown skin markings typical of tropical grapefruit are frequently considered an indication that the fruit is bad, although some salesmen are of the opinion that consumers are now beginning to accept these markings. However there appears to be no specialised demand for tropical grapefruit as such, as there is in some other European markets. The sizes of grapefruit preferred on the United Kingdom market are counts 40 and 48 for the retail trade, 32 or larger for the catering trade. There appears to be a trend towards the larger sizes of grapefruit. However, size preferences depend very much upon prevailing prices, since grapefruit are invariably sold by the piece and, particularly in chain stores, retail prices are held constant while the size of fruit is varied.

Grapefruit is almost invariably used as a "starter" to a meal - breakfast in particular, thus it does not compete directly with other fresh fruits, - except possibly melons - the main competing products are canned grapefruit segments, and to a lesser extent, canned and frozen fruit juices. Demand might be expected to be greatest in the summer months but supplies of fresh grapefruit are limited then and not always of good quality. During the winter months breakfast cereals and porridge are widely consumed for breakfast, although slimming diets have probably stimulated demand for grapefruit in recent years.

Prices and Margins

The average cif prices for imports of fresh grapefruit over the last six years are tabulated below. These are values as reported in importers' declarations to Customs and are exclusive of any duty payable.

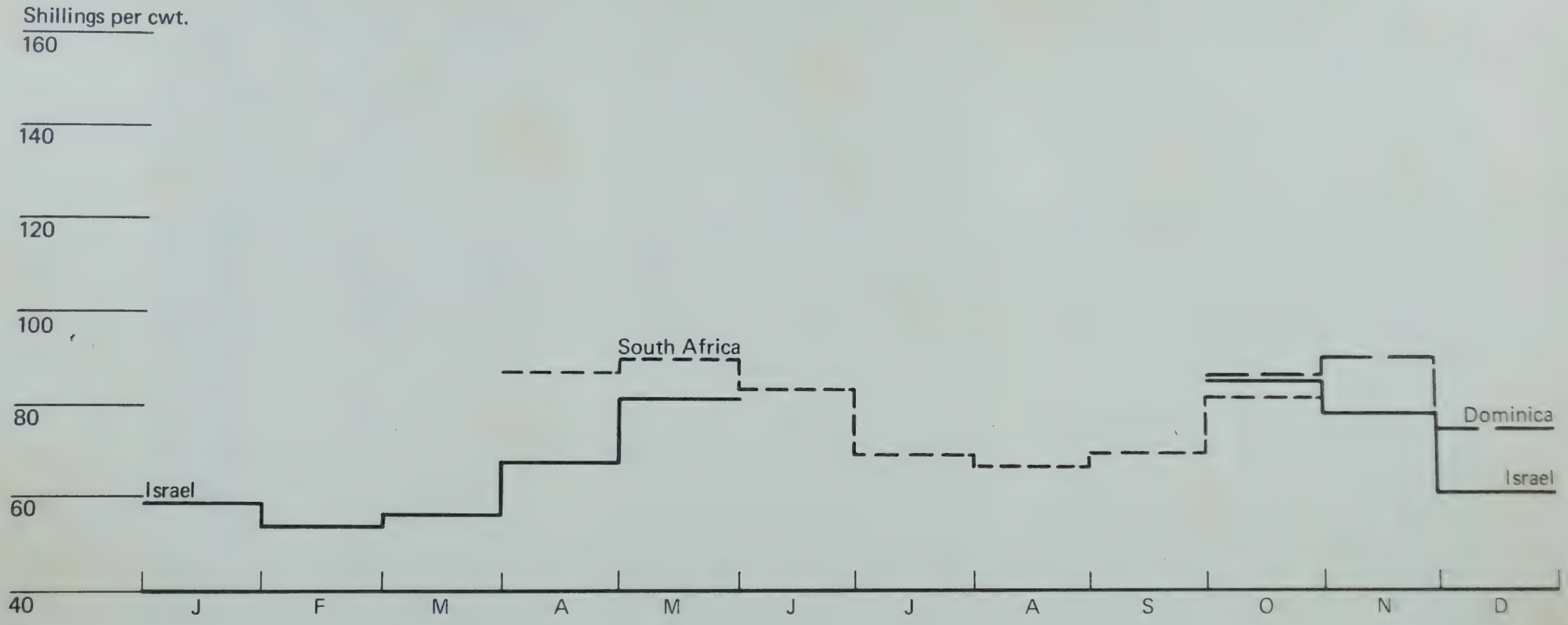
	1963	1964	1965	1966	1967	1968
	Shillings and pence per cwt					
All sources	70/0	63/6	62/6	65/0	70/6	69/3
Israel	69/0	61/6	60/6	70/9	63/6	62/9
Cyprus	56/9	50/0	50/0	53/0	55/6	59/0
Dominica	37/0	37/0	35/9	34/9	37/3	32/6
Jamaica	72/3	77/6	82/6	96/0	108/6	130/6
Trinidad	59/9	57/9	48/0	41/3	47/9	47/9
United States	82/6	78/3	71/9	90/0	79/6	129/0
Swaziland	85/6	70/3	54/6	61/6	88/0	83/6
Mozambique	85/3	64/9	78/9	67/6	83/6	76/6
South Africa	77/6	72/0	73/6	67/0	83/0	86/9

After falling from a high level in 1963 when supplies were limited the average value of grapefruit imports increased from 1965 onwards in spite of the larger quantities imported - even in 1968 when imports were 14 per cent above the 1967 figure, the value per cwt fell very little. It may be seen that imports from the Southern Hemisphere countries, which arrive during the summer months, fetch higher prices than grapefruit from the Northern Hemisphere countries (with the exception of 1966). Jamaican grapefruit has the highest average value due to its favourable season in September and October when there is little competition from the main suppliers. Cyprus and Trinidad grapefruit fetch lower prices than the competing Israeli fruit. The very low average cif prices for Dominican grapefruit are probably due to mis-recording, since according to the importers, cif values have ranged from 79s 3d to 101s 0d per cwt over the last three years, reflecting the high prices for Dominican fruit at wholesale level (see fig.11).

Average monthly wholesale prices for the last 5 years are shown in fig.11. Three sources of supply - Israel, South Africa and Dominica, have been chosen as indicative of supplies during the winter, summer and autumn, respectively. The prices shown should only be taken as an indication of the prices prevailing in any one month, and not as a true average. The values shown in the diagram are converted to cwt for easy comparison although prices are usually quoted per case or carton. It will be noticed that prices are at their highest in August, September, October and in some seasons, November. They then fall rapidly, as supplies increase, and stay at a low level from December to March, after which a gradual recovery occurs. This pattern was not followed in 1969 when there was an unusual distribution of supplies, resulting in a severe shortage of grapefruit during the early summer months and peak prices in June and July, followed by a decline. During the autumn months each supplying country enjoys high prices at the beginning of their season (in most cases somewhat above those of the out-going South African

Figure 11a

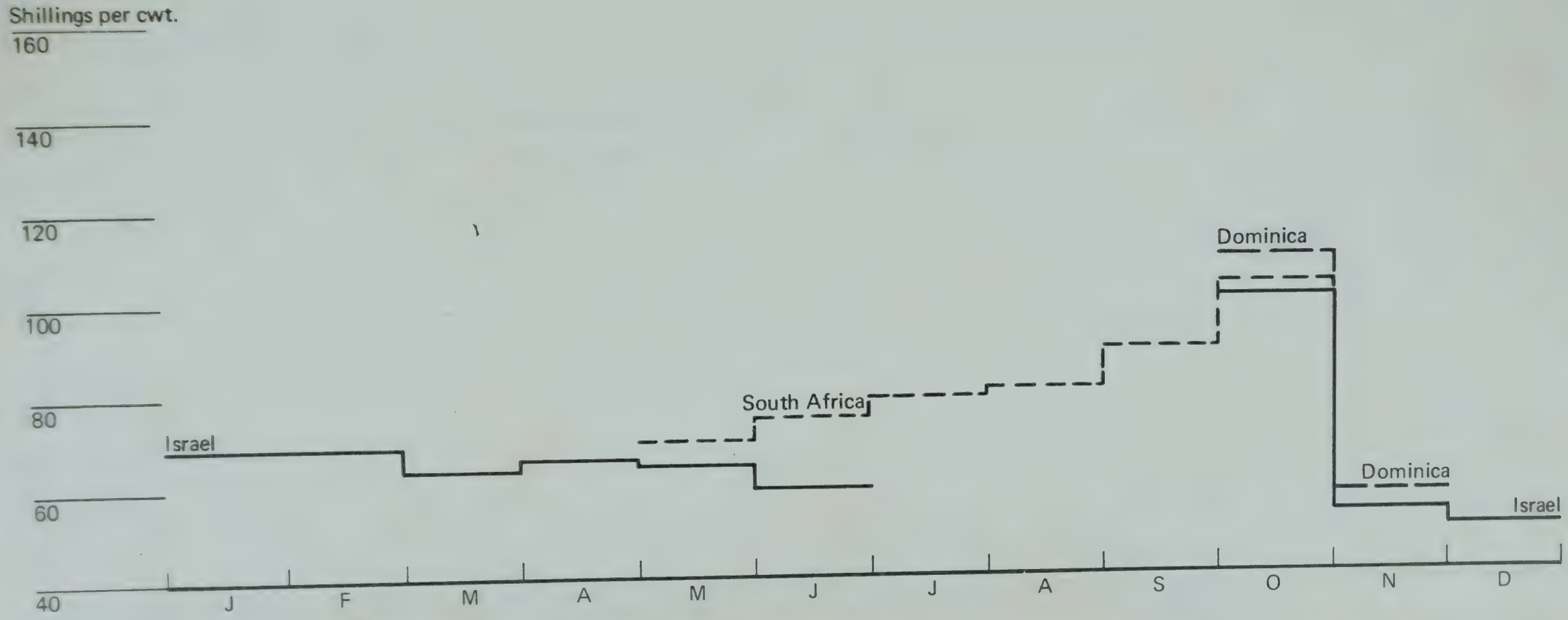
Grapefruit Monthly average prices at wholesale markets in England and Wales 1965



Source: Fruit Intelligence, Commonwealth Secretariat

Figure 11b

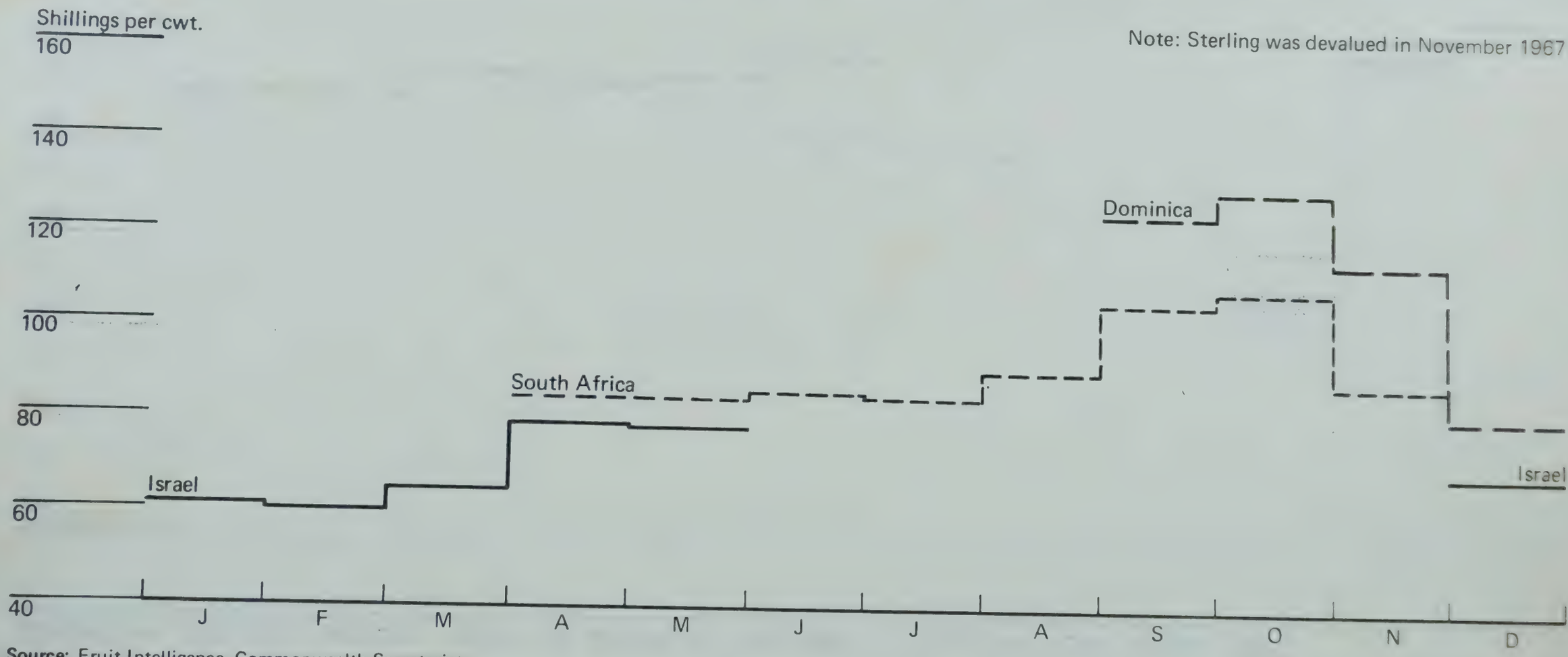
Grapefruit Monthly average prices at wholesale markets in England and Wales 1966



Source: Fruit Intelligence, Commonwealth Secretariat

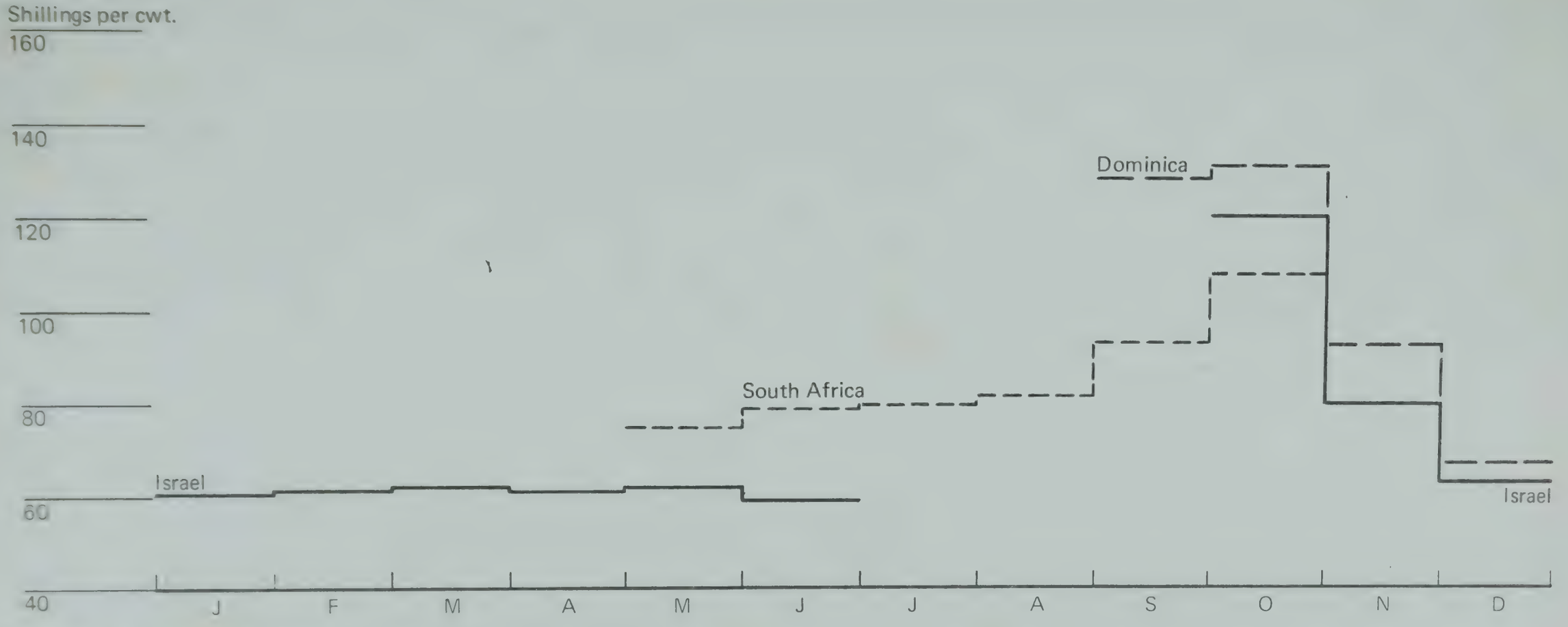
Figure 11c

Grapefruit Monthly average prices at wholesale markets in England and Wales 1967



Source: Fruit Intelligence, Commonwealth Secretariat

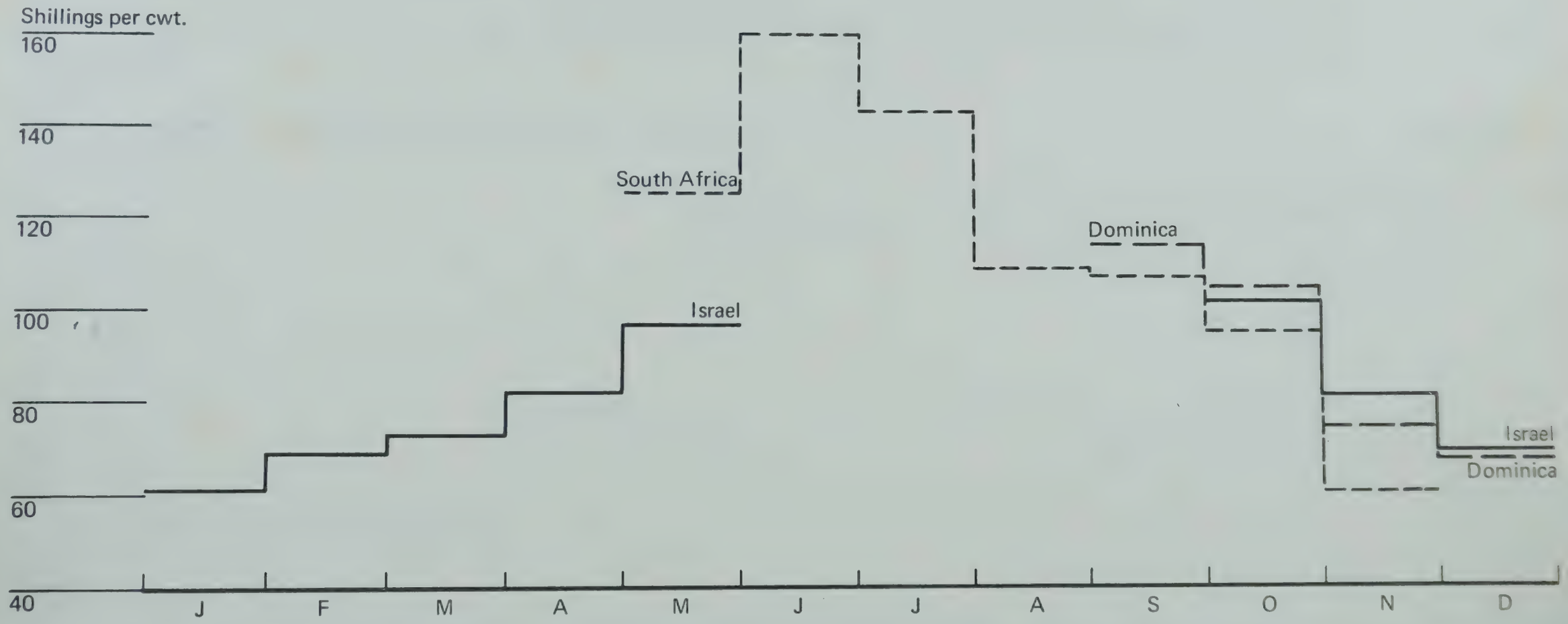
Figure 11d
Grapefruit Monthly average prices at wholesale markets in England and Wales 1968



Source: Fruit Intelligence, Commonwealth Secretariat

Figure 11e

Grapefruit Monthly average prices at wholesale markets in England and Wales 1969



Source: Fruit Intelligence, Commonwealth Secretariat

fruit), prices then fall and may recover again towards the end of the season. However South African prices, though showing a premium over those paid for Israeli fruit in the early part of the season, generally rise to a peak at the end of the season. This is because, in recent years, substantial quantities of cold-stored Israeli grapefruit have been available until May or even June, whereas later in the season there is little or no competing fruit available until West Indian grapefruit begins to arrive in September. During the winter and spring months Israeli grapefruit fetches a premium at wholesale over that from Cyprus, Trinidad and other sources, thus maintaining the cif relationship noted above. This is attributed to its reputation for good quality.

Wholesale prices may be affected by many factors, chief of which are supply and demand. The price made by any particular consignment of fruit will also depend on its quality (in which the reputation of the exporter plays a large part) and the size of the fruit - the more popular sizes commonly fetch a premium over large or small fruit. Gluts of fruit are of less importance now, when desert-type grapefruit may be held in cold storage for up to two months, although knowledge that supplies are held in store may keep prices down. Another important factor is the previous trend of prices - after a period of short supplies and high prices demand is low, and even when more fruit becomes available retailers must dispose of their high-priced fruit before restocking with cheaper fruit, so prices may drop drastically before demand rises again (as happened in November 1966). This tends to happen in some degree every year after the high prices of the summer months and frequently even higher prices of September and October. The wholesale trade were of the opinion that more grapefruit could be sold, possibly at higher average prices, if fluctuations in supply could be ironed out.

Of course the wholesale trade does not present the complete picture of grapefruit sales since several of the largest chain stores obtain their supplies direct from importers or exporters' agents in this country (for example the CMBI and the Outspan organisation). The prices realised for direct sales are not known, although they are believed to be linked in some way to ruling wholesale market prices. Some chains are prepared to pay a premium over the wholesale price to obtain extra high quality fruit, while others buy at a fixed price over the season, or for part of the season. Thus, since chain stores do not pay the wholesalers' commission or market handling charges, it is possible that returns from direct sales exceed returns on similar fruit sold through the wholesale markets. On the whole, chain stores prefer to sell the best-known and widely advertised brands of grapefruit, namely Outspan in the summer and Jaffa in the winter months; minor suppliers are simply used to "fill-in" between the main seasons.

Retail prices for grapefruit may range from 7d to 1s 6d per piece and in independent retail outlets almost invariably follow the trend of wholesale prices. However chain stores frequently stabilise prices at a certain level over several weeks and sell different sized fruit, according to the wholesale price. There seems to be considerable consumer resistence to grapefruit priced at more than 1s 0d and high prices almost certainly encourage the use of canned grapefruit. Once customers begin buying canned grapefruit it may be difficult to wean them back to the fresh fruit.

The margins charged at different stages of the marketing process can obviously vary considerably. Importers'/wholesalers' commission will usually range from 8 to 10 per cent and a secondary wholesaler will also expect a margin of about this amount. Other costs incurred between importation and retail sale include dock dues, transport and market handling charges. The retail margin is the most variable component, depending on the custom of the individual retailer. On the whole, large chain stores and supermarkets having a quick turnover tend to charge a relatively small mark-up, whereas high-class fruiterers generally charge a relatively high mark-up. However, consumer resistence to high prices probably means that retail margins are smaller when wholesale prices are high. A typical mark-up in an independent retail outlet would be 40 to 50 per cent giving a 28 to 33 per cent profit margin.

The German Market for Grapefruit

Although grapefruit was virtually unknown in Germany before the War, consumption increased rapidly during the post-War years and per capita consumption doubled between 1963 and 1968, reaching 2.8 lb per head in the latter year. One importer forecast that imports might reach 150,000 tons per annum within the foreseeable future, which would make German per capita consumption the highest in Europe. On the other hand, another importer considered that the rate of increase of consumption would be lower in future.

There are only two major ports in Germany which handle fruit, namely Hamburg and Bremen. However, substantial supplies are received overland from Rotterdam, Marseilles and Trieste. Within the German railway system it is cheaper to transport goods from north to south than vice versa, which tends to encourage the use of the North German ports. There are primary wholesale markets in all the major centres of population, but the most important markets for citrus fruit are situated at Hamburg and Bremen. The Hamburg auctions are still of considerable, though declining, importance, for example in 1968/9, 20 to 25 per cent of Israeli grapefruit was sold through the Hamburg auctions, about 70 per cent of Cyprus fruit and 100 per cent of Honduras fruit (49).

The independent retailer is now of little importance in the urban areas of Germany, where fruit sales are chiefly effected through chain stores and supermarkets. The catering trade has never been an important outlet for fresh grapefruit, preferring to serve grapefruit juice. As in the United Kingdom grapefruit is eaten as a "starter" to a meal (but not usually at breakfast) and also as a dessert. It should be noted that the practice of eating fruit, such as melons, to start a meal, has only recently become established in Germany.

There is an increasing demand for pink-fleshed grapefruit (promoted by all exporting countries as "grapefruit rose") on the German market. Florida in particular, has promoted this type of grapefruit, as also has South Africa. Formerly, however, pink-fleshed grapefruit frequently had to be sold at a

discount, although prices were said to be equal to those for white-fleshed grapefruit last season. There also appears to be a growing demand for "tropical grapefruit" promoted as such, and sold in delicatessan stores. This was attributed by one importer to the promotion carried out by Florida and Honduras and their ability together to supply grapefruit on a regular basis virtually all year round. However, supplies of tropical grapefruit from other sources, such as Cuba and Trinidad, are regarded with some suspicion by wholesalers because of their short shelf life and liability to decay.

German buyers seem to prefer medium to small-sized grapefruit (counts 64 to 88 or 96 per 20 Kg box ie 48 to 66 per 15 Kg box). The larger sizes are preferred in South Germany where grapefruit is sold by the piece and the smaller sizes are sold in North Germany where retail sales of fruit are by weight.

Prices and Margins

The average cif values for imported grapefruit over the last six years are tabulated below:

	1963	1964	1965	1966	1967	1968
	Shillings and pence per cwt					
All sources	65/6	62/0	62/0	59/9	61/3	62/6
Israel	61/6	57/9	57/9	56/6	56/6	62/0
Cyprus	50/6	51/3	48/0	47/9	46/6	46/9
West Indies*	55/3	58/6	50/9	51/9	50/9	54/9
Honduras Republic	65/3	55/0	62/6	53/6	55/3	64/6
United States	77/3	73/6	67/9	66/3	68/0	74/0
Brazil	87/9	70/0	77/0	57/6	61/6	54/0
South Africa	77/3	80/0	77/3	76/0	85/6	75/6

* chiefly Trinidad

Source: Aussenhandel, Statistisches Bundesamt

Average values for grapefruit imported into Germany are somewhat lower than those for United Kingdom imports, both for "all sources" and for individual supplying countries (with the exception of South Africa). Moreover, there has been a decline in the overall average import value (calculated in marks rather than sterling). As in the United Kingdom, the highest average import prices are fetched by grapefruit sold in the summer months (from South Africa, the United States, and in the earlier years of the series, Brazil). Israeli fruit fetches a premium over that from Cyprus and Trinidad.

Unfortunately no series of wholesale or auction prices is available but "normal" prices for Israeli grapefruit are said to range from 20s 9d to 37s 6d per 20 Kg bruce box (ie 53s to 95s 6d per cwt) duty paid, ex quay and prices for South African fruit to range from 33s 6d to 41s 9d per 15 Kg carton (ie 113s 3d to 141s 6d per cwt) duty paid, ex quay (49). Obviously prices vary during the season according to supply and demand and the quality of the fruit. Large grapefruit generally make low prices per box.

Information concerning margins in the German fruit and vegetable trades is contained in the UNCTAD-GATT survey (50). The importer's margin ranges from 8 to 10 per cent. Auction brokers expect 2 per cent of the ex-quay price for goods sold on commission (this comes from the importer's margin) or 3 per cent of the invoice total for foods sold firm. Wholesalers' margins are generally between 10 and 15 per cent while retail margins range from 33 per ce in supermarkets to 67 per cent in some independent shops.

The French Market for Grapefruit

As in Germany, per capita consumption of grapefruit doubled between 1963 and 1968, in this case from 1.2 lb to 2.4 lb per head. However French importe do not expect consumption to increase so rapidly in future.

Marseilles and Le Havre are the major ports of entry for grapefruit imported into France but small quantities are also received overland from Spain and through the ports of Rotterdam and Trieste. There are primary wholesale markets in most large centres of population, the most important being at Rungis near Paris and Lyons in the South East. Since a large proportion of the French population lives in small towns or rural areas, distribution costs for imported fruit can be high. Auctions are not of any great importance in France, and many importers and more particularly, chain stores, buy firm on an fob basis. Last season (1968/9) more than 30 per cent of Israeli grapefruit imported into France was sold on a firm basis (51). Grapefruit from the United States is also usually bought on an fob basis.

The increase in consumption of grapefruit can probably be attributed to the promotion of this fruit in chain stores in recent years. Independent retailers are of minor importance as outlets, and the catering trade does not appear to be of any importance. Supermarkets frequently stock both tropical and desert types of grapefruit, charging slightly more for the former. It appears that there is a definite consumer demand for tropical grapefruit, although pink-fleshed grapefruit do not seem to be of much importance in France.

The sizes preferred on the French market are similar to those favoured in Germany ie counts 64 to 88 per 20 Kg box (48 to 66 per 15 Kg box). However tropical grapefruit rather larger in size is acceptable. Although by French law fruit should be sold by weight, in actual practice grapefruit is frequently sold by the piece or per bag of two or three fruit, especially in supermarkets

and chain stores. As a starter to a meal, grapefruit suffers severe competition from domestically produced melons during the summer months July to September. However in some circles, grapefruit is a "status" product.

Prices and Margins

The average cif values for imports of grapefruit into France during the last six years are shown below.

	1963	1964	1965	1966	1967	1968
	Shillings and pence per cwt					
All sources	65/0	63/0	61/3	67/3	73/0	75/6
Israel	54/6	53/9	52/9	59/6	66/9	69/9
Morocco	57/0	55/0	54/6	53/9	64/9	58/0
South Africa	80/4	75/9	81/3	83/3	77/9	75/0
Honduras	64/6	58/9	85/3	84/0	84/0	88/3
Surinam	83/6	99/0	107/9	101/0	103/3	139/0
United States	83/9	77/9	70/3	79/9	85/3	105/4

Source: Commerce Exterieur

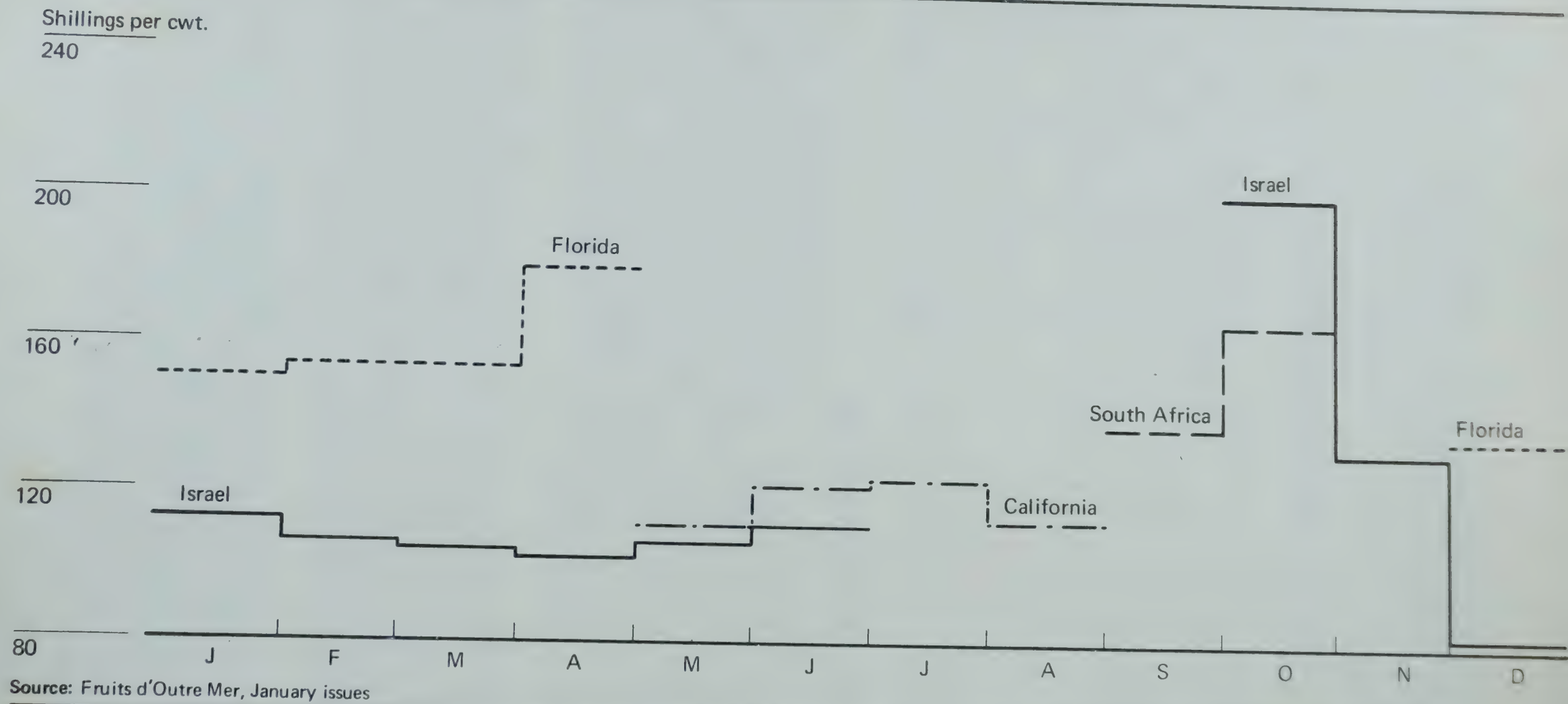
The average value of French imports of grapefruit is relatively high, and exceeded the value of UK imports in 1966 and 1967 (the apparent rise in value in 1968 should be discounted since values actually fell in franc terms). These high levels are chiefly the consequence of obtaining a relatively large proportion of supplies from the United States - a high-cost producer, and also of the high prices paid for tropical grapefruit from Honduras and Surinam. It is interesting to note that prior to 1966 grapefruit from Morocco fetched a higher cif price than Israeli fruit - probably because the former colony enjoys duty-free entry for her grapefruit while Israel had to pay a relatively high rate of duty, which was reduced in 1966.

The average monthly prices paid for grapefruit on the Paris wholesale market during 1968 and 1969 are shown in fig. 12. Again a few supplying areas have been chosen (Israel, Florida, South Africa and California) to give some indication of seasonal fluctuations in prices. As in the United Kingdom prices reach their peak in October. The pattern of prices was atypical in 1969 when prices rose steadily from January to a peak in July. In more normal years prices are relatively low in July and August (when melons and other fruit are plentiful). The premium paid for tropical (Florida) grapefruit over desert-type grapefruit is evident.

Prices paid for grapefruit in provincial markets are generally somewhat higher than the prevailing level in Paris - some of this difference may of course be accounted for by costs of transportation. As mentioned above, direct sales of grapefruit to chain stores are of considerable importance in France, particularly in the Paris area, and this may mean that the Paris wholesale market is of less significance in the distribution of grapefruit than the London wholesale markets, for example.

Figure 12a

Grapefruit Monthly average prices in the Paris wholesale market 1968

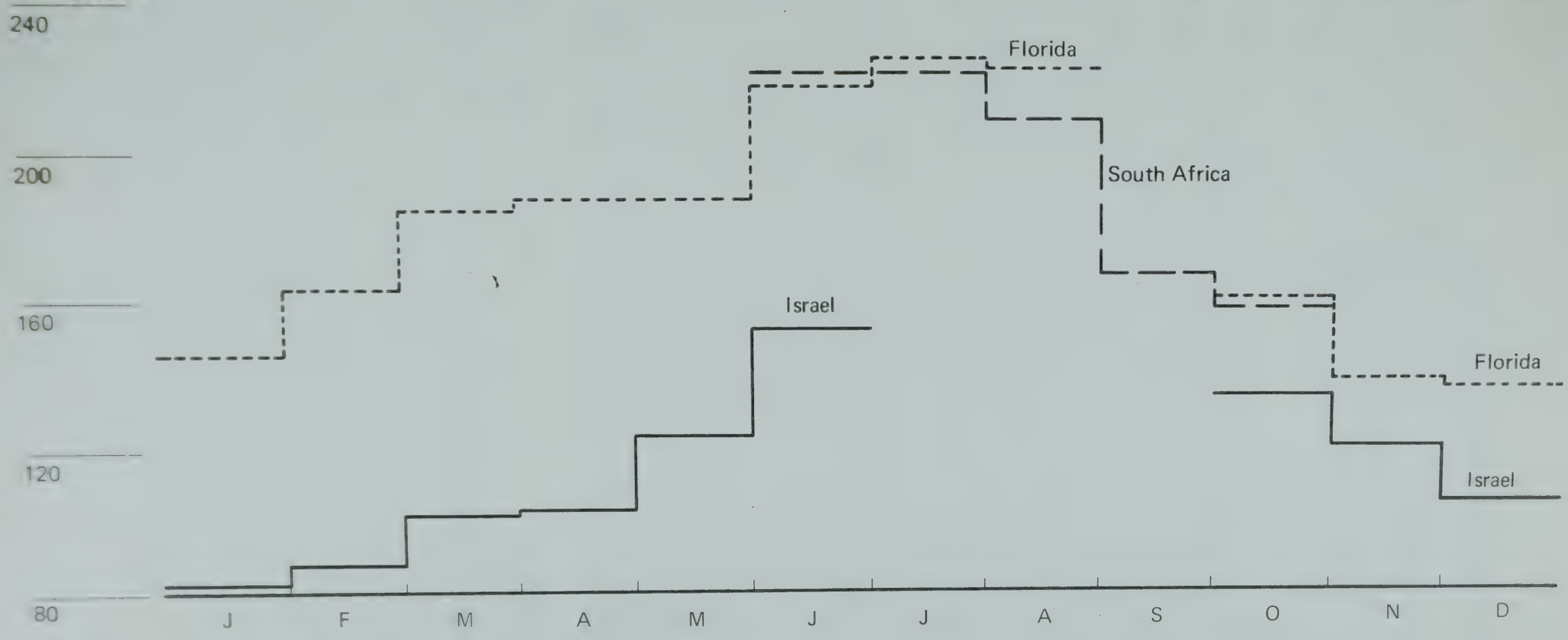


Source: Fruits d'Outre Mer, January issues

Figure 12 b

Grapefruit Monthly average prices in the Paris wholesale market 1969

Note: The franc was devalued in August 1969



Source: Fruits d'Outre Mer, January issues

The Netherlands Market for Grapefruit

Per capita consumption of grapefruit in the Netherlands also showed a rapid rate of increase over the period 1963 to 1968 - from 1.8 lb per capita to 3.4 lb (taking account of re-exports). The last two years, 1967 and 1968, showed particularly large increases in consumption (29 per cent and 26 per cent, respectively) but it seems unlikely that such a high rate of increase will be maintained.

Rotterdam is the largest port and fruit market in the Netherlands and also has an important entrepot trade with neighbouring countries. In Rotterdam and Amsterdam (the other large fruit market in the Netherlands) a very large proportion of imported fruit is sold by auction, although importers may sell direct to wholesalers or chain stores. The Rotterdam citrus auctions are attended by buyers from most Continental European countries, including the Eastern European countries.
Commission sales are the most usual method of trading, but "Extra" grade fruit may be bought firm on occasion. The major wholesale fruit markets are those in Rotterdam, Amsterdam, The Hague and Utrecht. Wholesalers buy their requirements at the auctions. Since the Netherlands is a very small, densely populated country, distribution costs are not high.

As in other European countries, grapefruit is eaten as a "starter" to a meal, and in this respect there is some competition from domestically produced melons during the months June to August. However, as in other continental European countries there is virtually no competition from canned grapefruit segments on this market. So far as the quality and type of fruit is concerned, Dutch consumers appear to prefer small grapefruit (counts of up to 100 per 20 Kg box, or 75 per 15 Kg box) - it has been suggested that this may be becaus fruit is sold by weight at the retail level. However, there seems to be little prejudice against tropical grapefruit from the United States, Surinam and Honduras, although tropical fruit tend to be rather large. One major chain of supermarkets has relied chiefly on Surinam grapefruit (bought direct) during recent seasons.

Prices and Margins

The average cif values for grapefruit imported into the Netherlands over the last six years are shown overleaf.

	1963	1964	1965	1966	1967	1968
	Shillings and pence per cwt					
All sources	50/3	49/0	50/9	53/0	61/0	52/6
Israel	55/9	45/3	45/3	53/3	55/6	52/0
United States	57/0	60/6	61/6	60/6	73/3	52/9
Surinam	46/9	43/6	49/9	53/0	56/0	56/6
Honduras	42/9	32/0	47/0	36/0	52/9	49/9
Brazil	57/0	25/9	34/0	24/6	50/9	38/0
Paraguay	-	-	60/9	36/0	61/3	38/3
South Africa	48/0	53/6	51/3	75/9	66/6	49/3

Source: Maandstatistick van de In-Uit -Voer

The average value of imports of grapefruit is generally low compared with that in other markets studied but it showed an upward trend until 1967, before falling in 1968 (the fall was of course, larger in terms of guilders). However the trends for the individual supplying countries varied considerably, only Surinam showing a steady upward trend in values from 1964 to 1967. It has been suggested that the auction system is responsible for the fluctuations in prices both within a season and between one season and another and is disliked by some exporters. The general fall in prices in 1968 suggests that the market was over-supplied in that year and that demand was not so bouyant as the rise in per capita consumption might imply.

Unfortunately the auction system of sales does not permit the compilation of average wholesale prices for markets in the Netherlands. Importers charge a rate of between 6 and 8 per cent commission, but the average gross margin on firm sales is of the order of 10 per cent. Wholesalers expect a gross margin of 10 to 15 per cent. Retail prices are low relative to those in some other European countries, the retail margin being estimated at about 25 per cent (52).

The Belgian Market for Grapefruit

Belgium was an important market for grapefruit in the pre-War years, but per capita consumption has not risen as rapidly in Belgium as in the other EEC countries in recent years. Nevertheless in 1968 per capita consumption averaged 2.8 lb - a 75 per cent increase over the 1963 figure.

The main port in Belgium is Antwerp, where citrus is also auctioned. As in the Netherlands, most citrus fruit imported into the country is sold through the auctions, although chain stores may import direct. There are wholesale markets in all the large centres of population, the most important being that in Brussels. Distribution costs are low since the country is small and densely populated. Chain stores are probably of less importance as outlets for fruit and vegetables in Belgium than in the Netherlands and Germany, for example,

although large department stores generally sell fruit and vegetables.

There appears to be no particular preference for desert-type as against tropical grapefruit. Medium to small fruit are required on this market.

Prices and Margins

Average cif values for grapefruit imported into Belgium during the last six years are shown below.

	1963	1964	1965	1966	1967	1968
	Shillings and pence per cwt					
All sources	52/6	51/0	51/3	53/9	57/9	59/9
Israel	48/0	49/3	47/9	51/6	52/0	59/6
United States	57/0	53/9	58/9	59/0	70/0	-
South Africa	60/3	-	-	-	-	-

Source: Commerce Exterieur

These average values are somewhat lower than those for German and French imports, but similar to Dutch import values. There was a rising trend in average values (in sterling terms) from 1964 to 1968 while values of imports from the United States also rose. The upward trend in value of Israeli grapefruit was interrupted by a decline in 1965. It should be noted that United States grapefruit invariably fetched a premium over Israeli fruit, while in 1963, the only year for which information is available, South African supplies fetched a higher average price than American.

Unfortunately no wholesale prices are available for grapefruit sold on Belgian markets. However a study made in 1964 (53) estimated that gross wholesale margins are between 10 and 16 per cent while the retailer's margin varies between 65 and 110 per cent. In addition a transmission tax of 14 per cent is levied on the gross landed value of the fruit (cif value plus any import duty payable). Therefore retail prices in Belgium are relatively high and probably serve to limit consumption.

The Swiss Market for Grapefruit

In recent years per capita consumption of grapefruit in Switzerland has on occasion exceeded that in the United Kingdom. Consumption has fluctuated somewhat, but rose from 2.7 lb per head in 1963 to 3.6 lb in 1967 before falling to 3.3 lb in 1968.

As Switzerland is a completely land-locked country all imports are received by rail or road from Rotterdam and various South European ports. The only established wholesale market as such, is in Geneva; in other major cities - Basle, Zurich, Lausanne and Lucerne, fruit and vegetables are sold directly from rail wagons, the importers' premises being situated close to the railway sidings. There is one large co-operative retail group - "Migros" - which imports on its own account and employs a buyer in Milan wholesale market. Migros accounts for a substantial proportion of retail fruit and vegetable sales in Switzerland, but may not be a major outlet for grapefruit. Migros of course buys on a firm basis, as do most of the importers.

Pink and red-fleshed grapefruit are accepted on the Swiss market, but most grapefruit sold is of the white-fleshed desert type. Medium to large fruit are preferred - counts 48 to 64 per 20 Kg box (36 to 48 per 15 Kg box). There is said to be an increasing preference for the larger sizes.

As a starter to a meal, grapefruit suffers competition from melons during the summer months (per capita consumption of melons is relatively high in Switzerland) and also from fruit juices throughout the year. Canned grapefruit is of little or no importance except possibly in catering outlets. It seems likely that there is a substantial catering demand for grapefruit in Switzerland resulting from the large number of tourists staying in the country, especially during the winter months. This would account for the apparently high level of per capita consumption.

Prices and Margins

The average cif values for grapefruit imported into Switzerland during the last six years are shown below:-

	1963	1964	1965	1966	1967	1968
	Shillings and pence per cwt					
All sources	65/6	64/3	69/6	67/6	68/3	71/0
Israel	58/3	59/0	60/0	62/6	60/0	69/6
Cyprus	-	-	76/0	56/9	59/6	57/6
United States	101/0	86/9	98/6	83/3	89/6	101/6
South Africa	94/9	85/3	104/0	93/3	102/3	91/0

Source: Statistique de la Suisse

The level of import values is similar to that for United Kingdom imports and rather higher than those for some other continental European countries, probably because of additional transport costs. There is no obvious trend in import values - the average value was highest in 1965 (the 1968 average value was lower than that of 1967 in franc terms). As would be expected, Israeli grapefruit fetches lower prices than that from the United States and South Africa, but generally fetches a premium over Cyprus grapefruit. The prices paid for US and South African fruit are unusually high, but this may be accounted for by high transport costs from North European ports.

Unfortunately there is no information available concerning wholesale prices on Swiss markets, or importers' and wholesalers' margins. Migros, however, operates on a two per cent profit margin, ie 8 to 10 per cent gross margin, which presumably means that fruit prices are low in their stores.

The Italian Market for Grapefruit

Although small quantities of grapefruit are produced in Italy this fruit was virtually unknown before import regulations were liberalised in 1964, and even now consumption is limited to large urban centres. Per capita consumption is still very low, having increased from 0.04 lb per head in 1963 to about 0.3 lb per head in 1968. This obviously leaves much scope for an increase in consumption, although, as Italy is a major producing country of other types of citrus, grapefruit consumption may not rise to the levels prevailing in other European countries. It is quite possible that the main consumers of grapefruit are tourists and foreign residents in Italy.

Trieste is one of the ports utilised by the Israeli Board to supply Northern European countries and most Italian imports of grapefruit presumably pass through this port. Supplies may also be received overland from Marseilles. The main wholesale markets are situated in the large urban centres of Northern Italy, the most important market for imported fruit being at Milan, which handled more than 30 per cent of the grapefruit imported in 1968 (54). Buying on a firm basis is the general rule - virtually all Israeli fruit is bought firm.

Although chain stores and supermarkets have increased their share of the retail food trade very rapidly in recent years, especially in Northern Italy, fruit and vegetables are still sold chiefly through small independent retail outlets and street traders.

Since imports were liberalised, virtually all grapefruit imported have been of the desert-type which may be assumed to be the preferred type on this market.

Prices and Margins

Annual average cif values of grapefruit imported into Italy over the period 1963 to 1967 are shown below:-

	1963	1964	1965	1966	1967	1968
	Shillings and pence per cwt					
All sources	51/0	64/0	63/0	68/0	72/3	66/6
Israel	-	65/0	60/6	69/0	66/0	66/0
Somalia	53/6	45/6	63/0	46/9	49/7	...
South Africa	-	-	-	81/3	90/6	...

Source: Comercio con L'Estero

Import values showed a rising trend until 1967 as first Israeli and then South African grapefruit was introduced to the Italian market. Except in 1965 the value of imports from Somalia was well below that of Israeli supplies. South African grapefruit fetched very high prices in 1966 and 1967.

Unfortunately no wholesale price series is available for grapefruit sold on Italian markets - since this fruit is of minor importance, price quotations tend to be sporadic. Prices at Milan market during 1968 varied from about 150s 0d per cwt during the early months of the year to 126s 6d during the later months (presumably for Israeli grapefruit) (55). These wholesale prices are high, in comparison with wholesale prices in other countries, which suggests that demand was not fully met. These prices were also more than double import values for 1968 - which illustrates the tendency for wholesale margins to be rather high in Italy.

The Scandinavian Markets for Grapefruit

Per capita consumption of fresh grapefruit is lower than the European average in all the Scandinavian countries (1.2 lb per head on average in 1967). However consumption of grapefruit juice is high, particularly in Sweden (56), and this probably limits the fresh fruit market.

Although wholesale markets exist in the main centres of population, co-operative retail groups are the major outlets for fruit and vegetables in Scandinavia and these organisations import on their own account. Firm buying is the rule, although auctions are still held in Copenhagen (Denmark).

Pink-fleshed grapefruit is said to be popular in Scandinavia, especially in Sweden, and Florida and Texas fruit generally fetches a premium (57).

If import values are taken as an indication of wholesale prices, the level of prices in Denmark and Finland is similar to that in the United Kingdom but prices in Sweden and, more particularly, Norway, are the highest in Europe. These high prices are of course, partly accounted for by the distance of the Scandinavian countries from their suppliers.

The existence of value-added taxes in these countries at rates varying from 11.11 per cent to 12.5 per cent serves to raise retail prices, but since these taxes are levied on all goods, consumption of grapefruit relative to other fruits should not be affected.

PART IV: CONCLUSIONS AND FUTURE PROSPECTS FOR THE FRESH GRAPEFRUIT MARKET

The first three sections of this report described the production, trade and markets for fresh grapefruit at the present time. This final section attempts to project future trends in production and consumption and hence estimate market prospects for potential suppliers of fresh grapefruit to world markets. The subject is considered initially on the basis of past trends and secondly on a more conjectural basis.

Production

FAO estimates of future grapefruit production suggest that it could reach 3,560,000 tons by 1975 (1). This is a figure of output potential, taking account of bearing acreage, new plantings, and possible increases in yield, but ignoring the possible effects of adverse weather conditions. The FAO estimates of production in major producing countries for 1975 are as follows:-

	Long Tons
United States	2,460,000
Israel	315,000
South Africa	123,000
Argentina	98,000
Cyprus	44,000
Caribbean Area	157,000
	3,197,000

Source: Review of 1975 Projections for Citrus Fruit CCP: CI 69/5 Add 1. FAO

However in the United States and Argentina a large proportion of the crop will be required for local consumption and for processing into segments or juice. Potential export availabilities for grapefruit in the major producing countries in 1975 are therefore estimated by FAO as shown below:-

	Long Tons
United States	638,000
Israel	270,000
South Africa	98,000
Argentina	6,000
Cyprus	39,000
Caribbean Area	90,000
	1,141,000

Source: Review of 1975 Projections for Citrus Fruit. FAO

FAO estimates that by 1975 240,000 tons of this total will be required for processed products entering international trade, leaving some 900,000 tons to be absorbed by the fresh fruit trade. However, since domestic disappearance of the US grapefruit crop in 1966/7 exceeded that forecast by the FAO for 1975 the figure for US export availabilities is almost certainly an over-estimate. In fact total export availability will probably be less than 600,000 tons.

Consumption

a. Past Trends

Estimates for 1975 consumption of grapefruit in the major importing countries have been prepared by FAO based on average imports during the period 1963/4 to 1966/7, estimated population growth and income increases. Import data for more recent years, however, suggest that these estimates should be revised, so projections for 1975 based on imports up to and including 1968 have been prepared in TPI. The two sets of estimates are shown below:-

Long Tons

	1968		FAO estimates for 1975		TPI estimates for 19	
Importing Country	Per Caput consumption in lb	Net Imports/ Total Consumption	Per caput consumption in lb	Total consumption	Per caput consumption in lb.	Total Consumpti
United Kingdom	3.6	89,630	4.0	101,000	3.9	99,200
Canada	7.4	68,497	8.1	86,000	9.1	94,800
Germany	2.8	71,692	2.6	74,000	3.8	106,900
France	2.4	52,587	2.6	62,000	3.9	91,900
Netherlands	3.4	19,131	3.1	19,000	3.9	23,900
Belgium	2.5	10,916	3.1	14,000	3.7	17,400
Italy	0.3	6,997	0.7	16,000	1.3	31,600
Switzerland	3.3	8,976	3.7	11,000	3.6	10,800
Sweden	1.1	4,038	1.8	7,000	1.7	6,500
Denmark	1.7	3,295	2.0	5,000	1.8	4,100
Finland	1.1	2,325	1.5	4,000	1.6	3,500
Norway	0.8	1,309	1.8	3,000	1.0	1,800
TOTALS				402,000		492,400

Sources: Review of 1975 Projections for Citrus Fruit: Statistical Supplement and see Appendix E.

A linear projection of past import trends would not provide a satisfactory estimate of future consumption because of the trends in grapefruit consumption in many continental European countries. Consumption was at a very low level until the early nineteen-sixties, but has risen rapidly latterly; however, this rate of increase is unlikely to be sustained and would be expected to slacken. The FAO projections are based on estimates of future income growth and the estimated income-elasticity of demand for grapefruit (expected to decline over time), assuming that prices remain constant at the levels of the base period (1963/64 to 1965/66 average). The method used for the TPI projections is explained in Appendix E. After correction for price movements, data for grapefruit consumption per caput over the period 1960 to 1968 were fitted to a sigmoid curve, which was then projected to 1975 in the same manner as a straight-line projection. In this case prices were assumed to remain constant at the average level over the period 1960 to 1968.

In total the TPI projections are considerably higher than the FAO projections, as a result of much higher estimates for imports into Canada and the EEC countries. On the other hand FAO estimates are marginally higher for the United Kingdom, Switzerland, and the Scandinavian countries. Any projection of Italian consumption is bound to be a "guessestimate" since consumption was negligible until very recently. It is interesting to note that the TPI projections put per caput consumption in 1975 at approximately 3.8 lb per annum in all the major European importing countries, apart from Italy.

Thus, if the TPI estimates for consumption in 1975 are reached; the export availability of grapefruit will exceed import demand by approximately 100,000 tons. However several factors may help to ameliorate the situation.

In the first place, past experience suggests that the United States crop will suffer periodic frost damage which will reduce the actual production figure to an appreciable extent, compared with potential production estimates. It will be remembered that increased production in the United States will contribute a large part of the projected surplus.

Secondly, large crops and the resulting low prices may stimulate domestic demand in the United States, and thus reduce export availability, by a greater extent than allowed for in the FAO projections.

Thirdly, no account has been taken of the possible emergence of the East European countries as regular purchasers of grapefruit (as they already are of other citrus fruits). These countries constitute a very large potential market, but at present import only about 5,000 tons per year on an occasional basis.

Finally, it seems possible that import demand is under-supplied during the months July to October at the present time and considerable quantities of fresh grapefruit could be absorbed during these months if they were available. This aspect will now be examined more fully.

b. Seasonal Demand

Up to this point all calculations concerning consumption have been made on an annual basis. However as was shown in Part II of this report, the average level of imports during the months July to October is generally much lower than during the other months of the year. Thus consumption of grapefruit is highest during the winter and spring months, rather than during the summer and autumn months when warm weather might be expected to stimulate demand. It seems likely that although demand will continue to increase during the winter months (especially in Italy), there is more scope for increasing consumption during the months July to October, and in particular during September and the first two weeks of October.

Is this a reasonable hypothesis? Wholesale prices in the United Kingdom, and to a lesser extent in France are high in the summer and autumn months compa with the rest of the year, which suggests that larger quantities of grapefruit could be sold at this time, if they were available. This opinion is certainly held by members of the trade in the United Kingdom (see page 67).

One factor which may hitherto have curbed demand for grapefruit during the summer and autumn months is the quality of the fruit generally available at this time. The leading suppliers from July to September are South Africa, and to a lesser extent, Brazil. Grapefruit from these countries takes twice as long to reach the European consumer as Mediterranean fruit and is generally accepted to be of lower intrinsic quality. By September and October virtually all South African grapefruit on the markets has been held in cold storage. The first shipments of the new season's crop from Mediterranean countries, which arrive towards the end of October, sometimes contain immature fruit. Although grapefruit from the Caribbean, generally considered to be of excellent eating quality, becomes available in September, only limited quantities are exported, chiefly to the United Kingdom. In North America, Californian summer grapefruit is held on the tree by use of hormone sprays, rather than held in cold storage, but there is a problem with immature early shipments of Florida fruit.

On the other hand it is possible that demand for grapefruit is low during the months July to October. There are several factors which might adversely affect demand at this time, for example domestically produced fruits are at their cheapest and most plentiful in the Northern Hemisphere during these months. In particular melons (which compete directly with grapefruit as a starter to a meal) are readily available. July to September are also the main holiday months in Europe and North America, although some members of the fruit trade in the United Kingdom consider that this stimulates catering demand for fresh grapefruit.

Taking these various factors into account, it is possible to estimate the presen unsatisfied demand for fresh grapefruit during the months July to October as follows:-

Long Tons

	July	August	September	October*	Total for this period
TOTALS of which	4,500	6,000	11,000	3,500 + (a)	25,000
United Kingdom	1,000	2,500	4,500	1,500	9,500
Germany	1,000	750	1,500	1,000	4,250
France	1,000	1,000	2,500	750	5,250
Canada	1,000	1,000	1,500	(a)	3,500 + (a)

* 1st 2 weeks (a) from 0-2,000 tons depending on US crop

These estimates are rough orders of magnitude only, based on the difference between imports during these months and the monthly average over the year for 1966, 1967 and 1968. The estimates are based on the assumption that latent demand for grapefruit is at a lower level during the summer and autumn than during the rest of the year, except in the United Kingdom, where it is assumed that latent demand is at a similar level all year. On this fairly conservative basis demand during these four months of the year is at present under-supplied by some 25,000 tons. However, if one assumes that the level of demand for fresh grapefruit is much the same all year round and only slightly affected by the availability of competing fruit from July to October, it may be reckoned that Western Europe and Canada could absorb in excess of 50,000 tons more grapefruit during the period July to October, unsatisfied demand being especially high in September. These estimates do not take account of any future increases in population or in the basic level of demand.

These estimates of 25,000 to 50,000 tons unsatisfied demand during the period July to October do not take account of potential demand in the United States since monthly supply data is not available for this market. However it seems likely that the United States could absorb as much grapefruit again as Western Europe and Canada during the months June to September (rather than July to October) if the gap in domestic supplies were to be filled by imports, although there is no evidence of this happening, as yet. This is possibly because the United States has very strict phyto-sanitary regulations for imported citrus fruits.

Prospects for a New Entrant to the Trade in fresh Grapefruit

To sum up the conclusions of this report:-

The major import markets at the present time are the United Kingdom, Canada, Germany and France and it is in these countries and Italy that increases in consumption are expected to be greatest in future. However any increase in demand during the months November to June can be met by the large increase in supplies expected in the established exporting countries - Israel, the United

States and Cyprus. Nevertheless there seems to be a considerable measure of unsatisfied demand for fresh grapefruit during the months July to October, when South Africa is the only large scale supplier to world markets. (Much of the projected increase in South African supplies will be available in May and June). In particular there is a "supply gap" during September and the first two weeks of October when supplies at present are limited to cold-stored South African fruit and small quantities of grapefruit from the Caribbean. In addition to the unsatisfied demand in Europe and Canada, it is possible that the United States market could offer a further outlet from June to September or early October.

To meet the requirements of consumers in Europe and North America a potential supplying country would have to offer good quality, seedless grapefruit having a yellow skin colour, thin skin, good internal quality and a reasonably long shelf life. White-fleshed grapefruit is usually preferred in European markets, but pink-fleshed fruit is acceptable in Germany and Scandinavia and preferred in North America. Desert-type grapefruit meet the requirements of the European trade rather better than tropical grapefruit. However a distinct but small demand for tropical grapefruit has developed in France and Germany and most grapefruit sold on North American markets are tropical-type fruit. In order to supply good quality grapefruit to North American and European markets during the summer months, refrigerated shipping would be necessary, but by September and October it might be possible to use ventilated stowage. To become established on European markets a new supplier would have to be able to supply grapefruit regularly and not export on an occasional basis.

Grapefruit of course has to comply with the phyto-sanitary and chemical residue regulations of the importing countries. These are restrictive only in the United States and Italy, and, in the latter case, exporting countries may apply for a waiver.

At present wholesale prices in the United Kingdom and France (the only two countries for which figures were available) are high during the summer months and reach a peak in September or October. Increased supplies would be expected to exert a downward influence on prices, but the precise effect is impossible to estimate.

This assessment of a potential supplier's market prospects for fresh grapefruit might be affected by unforeseen factors. For example, the problems of cold storage of grapefruit over long periods might be overcome so that Israeli and even Florida grapefruit could be available on European markets in July or even later, while South African grapefruit supplies could be increased in September and early October. However storage inevitably increases the cost of these supplies.

Developments which might affect the future market for grapefruit as a whole in the more distant future (after 1975) include the possibility that production of grapefruit could be established in the EEC - presumably in Italy. This would probably be followed by the introduction of reference prices on EEC markets, possibly higher tariff barriers, and the virtual closure of the Italian market to other suppliers, at least during the Mediterranean season, as has already happened for other citrus fruits.

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APPENDIX A

REVISED EUROPEAN STANDARD FOR GRAPEFRUIT

moving in trade between European countries.

I. Minimum Requirements

1. Without prejudice to stricter international and national requirements concerning phyto-sanitary measures and the use of chemicals, the fruit must be:

- intact
- sound (subject to the special provisions for each class)
- free from damage or deterioration caused by frost
- clean and free of all visible traces of chemicals
- free of all abnormal external moisture
- free of foreign taste or smell

2. The fruit must have been carefully picked and have reached an appropriate degree of development and ripeness in accordance with criteria proper to the variety and to the area in which they are grown. The state of ripeness must be such as to allow the fruit to withstand transport and handling and to meet market requirements at the place of destination.

Furthermore, the degree of colouring shall be such that, following normal development, the fruit reach their normal variety colour (special conditions applicable to each class) at their destination point, account being taken of the time of picking, the growing area and the duration of transport.

Fruit meeting these ripeness requirements may be "degreened". This treatment is permitted only if the other natural organoleptic characteristics are not modified. It shall be carried out in the manner prescribed by the administrative authorities in each country and under their supervision.

3. The fruit must be free from signs of shrivelling and bruising and from extensive healed-over cuts.

II. Minimum Juice Content and Colouring

- this refers to juice content in comparison with the total weight of the fruit, extracted by means of a hand press.

  Minimum juice content = 35 per cent.

Colouring must be normal for the varietal type. However, fruit with a greenish colour are allowed if they meet with the minimum requirements of juice content, account being taken of the time of picking and of the growing area.

III. Classification

i. "Extra" Class - fruit in this class must be of superior quality, free from any blemishes affecting their external appearance and/or their organoleptic characteristics. However, very slight superficial alteratio of the skin are not considered as "defects". Furthermore, fruit must show the characteristics and especially the typical colouring of their variety, account being taken of the time of picking and of the growing are

Tolerances - 5 per cent by number or weight of fruit not satisfying the requirements of the class, but conforming to those of Class I and not more than 5 per cent by number of the fruit having lost their button.

ii. Class I - fruit in this class must be of good quality. They must display t characteristics typical of the variety or type, having regard to the time of picking and to the area in which they are grown. The following defects, however, are allowed, provided they do not impair the general appearing or keeping qualities of fruit of a given consignment:

- slight defect in shape
- slight defect in colouring
- slight skin defects inherent in the formation of the fruit, such as silver scurfs, russets, etc.
- slight healed defects due to accidents

Tolerances - 10 per cent by number or weight of fruit not satisfying the requirements for the class, but conforming to those of Class II, and not more than 20 per cent by number of fruit having lost their button.

iii. Class II - this class comprises fruit which as a whole does not qualify for inclusion in the higher classes but satisfies the minimum requirement specified above. Defects or changes in appearance and skin are allowed if they do not seriously harm the general appearance or the conservation of fruit of a given consignment:

- defect in shape or colouring
- rough skin
- superficial healed skin alterations

IV. Sizing

The fruit must be sized according to the maximum diameter of their equatorial section.

Grapefruit of less than 70 mm diameter are not admitted.

Size	Diameter in mm	Tolerance
1	114-122	± 4 mm
2	105-114	
3	98-105	
4	92-98	
5	88-92	± 3 mm
6	85-88	
7	81-85	
8	75-81	
9	70-75	± 2 mm

Size tolerances - for all fruit packed in regular layers, and for all classes packed in open or closed packages, 5 per cent by number of fruits per package conforming to the size immediately above or below that stated on the package.

V. Packaging and Presentation

A. Uniformity

Each package, transport vehicle or transport vehicle compartment must contain fruit of the same variety, quality class and size (where required). In addition, for the "Extra" class, uniformity in colouring is required.

B. Packaging

Fruit may be put up in the following ways:

a. arranged in regular layers in closed or open packages (this presentation is compulsory for the "Extra" class)

b. not arranged in layers in closed or open packages

c. in bulk (direct loading into a transport vehicle or transport vehicle compartment).

If the fruit are wrapped, thin, dry new and odourless* paper must be used. The use of any substance tending to modify the natural characteristics of the citrus fruit, especially its taste or smell*, is prohibited.

Any paper or other material used inside the package, transport vehicle or transport vehicle compartment must be new and harmless to human food*.

The package must be free from any foreign bodies, except in the case of a sp presentation admitted by the importing country, where a twig with green leaves adheres to the fruit.

VI. Marking

i. In the case of produce put up in packages, each package must bear on th outside and grouped together on one side, the following particulars, legibly and indelibly marked.

ii. For produce consigned in bulk in a transport vehicle, the following information must be mentioned in a note accompanying the goods and attached to the inside of the vehicle.

a. Packer) Name and address or
Dispatcher) code mark

b. "Grapefruit", mention of variety is optional

c. District of origin, or nation, regional or local trade name

d. Commercial specifications:

i. Class

ii. Size:- reference number for fruit not in bulk

iii. Where appropriate, mention of diphenyl or other chemical substance used, where such use is compatible with the regulati of the importing country.

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* The use of diphenyl or any other chemical substance liable to leave a fore smell on the skin of the fruit is permitted where it is compatible with the regulations of the importing country.

iv. De-greening - except for the prescribed provisions of the exporting or importing country, the term "de-greening" or "de-greened fruits" is not required on each package, remaining at the discretion of the exporter.

However when it appears that, because of the use of a "de-greening" process, the percentages admitted for fruit having lost their button are likely to be exceeded at destination, the control service will mention the term "de-greening" or "de-greened fruit" on the document accompanying the product.

Source: United Nations AGRI/WP.1/EUR.STAN.18/Rev. 1.

UNITED STATES

GRAPEFRUIT IMPORT REGULATIONS

On and after September 30, 1968, the importation of any grapefruit is prohibited unless such grapefruit is inspected and meets the following requirements:-

Seeded Grapefruit - shall grade at least US No.1 and be of a size not smaller than $3\,15/16$ inches (100 mm) in diameter, except that a tolerance of 10 per cen by count, of seeded grapefruit smaller than such minimum size shall be permitted.

Seedless Grapefruit - shall grade at least Improved No.2 and be of a size not smaller than $3\,9/16$ inches (90 mm) in diameter, except that a tolerance of 10 per cent, by count, of seedless grapefruit smaller than such minimum size shall be permitted. ("Improved No. 2" shall mean grapefruit grading at least US No. 2 and also meeting the requirements of the US No. 1 grade as to shape (form) and colour).

Importers of grapefruit must arrange for inspection of all consignments by the Federal or Federal-State Inspection service, Fruit and Vegetable Division of the US Department of Agriculture. The cost of inspection and certification shall be borne by the applicant thereof.

US Standards for Grades of Florida Grapefruit

US No. 1

- consists of grapefruit which meet the following requirements:-

a. Basic requirements

- not more than one third of the surface, in the aggregate may be affecte by discolouration (ie russeting of a light shade of golden brown caused by rust mite or other means).
- fairly smooth texture of skin
- fairly well coloured (ie the yellow colour predominates over the green colour)
- firm

- mature (as defined in the Florida Citrus Code)
- well formed
- fruits in one container should be similar in size and shape

b. Free from:-

- bruises
- cuts not healed
- decay
- growth cracks
- wormy fruit

c. Free from damage caused by:-

- ammoniation
- buckskin
- caked melanose
- dirt or other foreign material
- disease
- dryness or mushy condition
- green spots
- hail
- insects
- oil spots
- scab
- scale
- scars
- skin breakdown
- sprayburn
- sprouting of seeds
- sunburn
- thorn scratches
- other means

US No. 2 "Improved"

- consists of grapefruit which meet the following requirements:-

a. Basic Requirements

- not more than a half of the surface, in aggregate, may be affected by discolouration
- fairly firm (ie the fruit may be slightly soft, but not bruised, and the skin not spongy, or puffy)
- mature
- fairly well coloured
- well-formed
- not more than slightly rough texture
- fruit in one container should be similar in size and shape

b. Free from:-

- bruises
- cuts not healed
- decay
- growth cracks
- wormy fruit

c. Free from serious damage by any other cause.

Standard Pack

a. Fruits shall be fairly uniform in size, unless specified as uniform in size, and when packed in boxes or cartons shall be arranged according to recognised methods. Each wrapped fruit shall be fairly well enclosed by its individual wrapper.

b. All containers shall be tightly packed and well filled, but the contents shal not show excessive or unnecessary bruising because of overfilled package When grapefruit are packed in cartons or wire-bound boxes, each contain shall be at least level full at time of packing.

c. The following ranges of diameters are commonly used in sizing Florida grapefruit:-

Pack Size	Minimum	Maximum
"36"	5"	5 9/16"
"45" or "46"	4 11/16"	5 4/16"
"54" or "56"	4 6/16"	4 15/16"
"64"	4 3/16"	4 12/16"
"70" or "72"	3 15/16"	4 8/16"
"80"	3 12/16"	4 5/16"
"96"	3 9/16"	4 2/16"

d. In order to allow for variations, other than sizing, incident to proper packing, not more than 5 per cent of the packages in any lot may fail to meet the requirements of standard pack.

Sources: Federal Register, Vol. 32, No. 187, 13487-92
Vol. 33, No. 186, 14365

APPENDIX C

FLORIDA GRAPEFRUIT: MATURITY STANDARDS

Seedless Grapefruit

- shall be deemed to be mature only when

a. each grapefruit shows a break in colour, caused solely by nature, with yellow colour predominating on not less than 25 per cent of the fruit's surface.

b. the total soluble solids content of the juice is no less than 7.5 per cent.

c. the ratio of total soluble solids to the anhydrous citric acid is as set forth in the State Citrus Laws 601.17.

d. the juice content of each grapefruit is not less than the minimum requirements for its size as set out hereunder.

Seeded Grapefruit

- shall be deemed to be mature only when

a. each grapefruit shows a break in colour, caused solely by nature, with yellow colour predominating on not less than 25 per cent of the fruit's surface.

b. the total soluble solids content of the juice is not less than 8 per cent.

c. the ratio of total soluble solids to the anhydrous citric acid is as set forth in the State Citrus Laws.

d. the juice content of each grapefruit is not less than the minimum requirements for its size as set out hereunder.

Minimum Juice Content

Diameter	Minimum Juice Content
$5\frac{1}{4}$ inches	360 cc
5 inches	320 cc
$4\frac{3}{4}$ inches	290 cc
$4\frac{1}{2}$ inches	250 cc
$4\frac{1}{4}$ inches	240 cc
$4\frac{1}{8}$ inches	210 cc
4 inches	190 cc
$3\frac{5}{8}$ inches	170 cc

Source:- "Citrus Fruits". H. Harold Hume, MacMillan, New York, 1957, pp. 306-7.

TABLE I

World Production of Grapefruit

Harvesting season commencing in given year	1957	1958	1959	1960	1961	1962	1963	1964	1965	1966	1967	1968 (a)
Northern Hemisphere												
North America												
United States	1,454	1,612	1,513	1,583	1,566	1,274	1,229	1,488	1,691	2,048	1,586	1,969
Mexico	..	..	..	..	7	10	9	11	11	10	12	12
TOTAL	1,454	1,612	1,513	1,583	1,573	1,284	1,238	1,499	1,702	2,058	1,598	1,981
Mediterranean												
Israel	62	70	73	68	73	97	134	157	183	217	256	268
Cyprus	8	8	8	9	13	13	15	21	23	31	35	37
Morocco	10	11	8	13	15	10	12	13	16	17	19	13
Spain	1	2	2	4	4	4	5	4	4	7	6	7
Lebanon	..	..	..	2	2	3	3	3	..	..	..	..
Turkey	2	2	2	2	2	2	2	3	3	3	4	..
Algeria	5	5	6	7	7	6	3	4	5	3	3	3
Portugal	-	-	-	-	1	2	2	2	(2)	(2)	5	..
TOTAL	88	98	99	105	117	137	176	207	236	280	328	..
Far East												
Philippines*	11	20	19	22	19	22	22	20	23	25	27	..
Taiwan*	7	7	7	7	8	7	7	9	10	11	12	..
TOTAL	18	27	26	29	27	29	29	29	33	36	39	..
Caribbean												
Jamaica	17	16	18	19	21	27	27	30	34	37	26	22
Trinidad	33	18	35	22	29	20	21	35	28	23	18	16
Puerto Rico	11	9	9	14	15	18	16	14	15	12	10	..
Cuba	7	7	7	7	7	7	9	10	11	11	(15)	..
British Honduras	7	7	8	9	4	8	11	9	9	8	8	10
Surinam	3	5	6	5	2	7	7	7	5	6	6	7
Honduras Republic	..	..	..	..	..	..	2	(3)	(3)	(3)	(3)	..
TOTAL	78	62	83	76	78	87	91	108	105	100	(86)	..
Southern Hemisphere												
South Africa	14	15	18	22	23	34	43	57	60	64	(76)	(88)
Mozambique	2	3	4	4	4	5	5	6	6	6	(6)	..
Swaziland	..	..	..	..	..	..	2	2	4	4	(4)	..
Argentina	20	28	30	32	40	47	49	60	72	80	85	83
Australia	6	7	7	7	8	9	9	9	9	8	9	7
New Zealand*	2	2	3	3	3	4	3	3	3	3	3	3
TOTAL	44	55	62	68	78	99	111	137	154	165	183	..
Grand Totals	1,682	1,854	1,783	1,861	1,873	1,634	1,635	1,980	2,230	2,639	(2,234)	(2,630)

(a) Preliminary .. Not available * Includes citrus hybrids similar to grapefruit ( ) Unofficial estimate

GRAPEFRUIT

Exports from Israel

		1959	1960 & 62 Average*	1963	1964	1965	1966	1967	1
TOTAL	Tons	45,749	52,353	64,529	82,256	91,201	110,545	121,949	152
	£'000	2,321	2,400	3,184	3,533	3,942	4,972	5,425	7
of which to:-									
Belgium	Tons	2,563	3,825	3,909	4,950	6,766	7,600	7,180	10
	£'000	...	173	210	213	283	335	339	
Denmark	Tons	1,700	1,539	1,834	1,557	1,901	1,367	1,812	1
	£'000	...	75	87	75	86	64	86	
Finland	Tons	944	742	841	1,052	1,681	1,801	1,621	1
	£'000	...	39	40	51	81	87	79	
France	Tons	8,266	8,886	11,716	14,817	19,515	20,990	25,419	33
	£'000	...	440	540	698	911	1,033	1,189	1
Germany	Tons	8,477	9,994	15,952	16,431	23,165	30,098	34,545	41
	£'000	...	471	830	759	1,035	1,346	1,493	2
Italy	Tons	-	-	-	400	1,207	3,258	3,279	5
	£'000	-	-	-	19	56	165	158	
Netherlands	Tons	1,442	1,853	2,537	5,954	5,219	5,096	6,777	9
	£'000	...	69	121	224	205	197	325	
Norway	Tons	639	587	639	552	766	746	727	
	£'000	...	27	31	27	35	35	35	
Sweden	Tons	1,061	1,331	2,001	2,100	2,663	2,430	2,173	2
	£'000	...	65	95	101	120	114	104	
Switzerland	Tons	5,015	3,326	5,957	6,199	4,931	5,087	6,510	6
	£'000	...	238	281	298	232	253	331	
United Kingdom	Tons	14,489	18,970	17,204	26,288	21,615	29,640	29,185	36
	£'000	...	735	863	977	818	1,224	1,153	1
Other Countries	Tons	1,153	1,300	1,939	1,956	1,772	2,432	2,721	3
	£'000	...	68	86	91	80	119	133	

... Information not available - Nil or negligible * 1961 shows quantitie only

Source: Israel Foreign Trade, Central Bureau of Statistics

GRAPEFRUIT

TABLE III

Exports from the United States

		1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	1968
TAL	Tons	73,205	89,923	70,990	73,914	87,497	95,790	114,871	78,659
	£'000	2,906	3,448	3,769	4,058	4,069	4,734	5,084	5,064
which to:-									
nada	Tons	52,930	60,872	48,115	46,786	58,999	68,942	83,819	64,065
	£'000	1,934	2,057	2,418	2,463	2,545	3,167	3,322	3,997
lgium	Tons	3,055	2,076	1,754	2,284	2,178	2,082	2,408	1,152
	£'000	152	103	110	145	133	129	150	90
nmark	Tons	149	495	199	464	355	275	396	91
	£'000	8	23	14	25	20	15	23	6
nland	Tons	3	146	266	460	419	149	135	-
	£'000	-	7	15	28	20	8	6	-
ance	Tons	392	5,219	6,650	7,392	8,507	9,559	10,657	5,286
	£'000	17	237	407	427	441	550	595	350
rmany	Tons	4,766	4,468	2,310	3,466	3,404	2,343	3,166	624
	£'000	217	188	118	181	147	119	142	53
pan	Tons	25	432	532	827	743	1,096	1,180	1,223
	£'000	2	23	38	59	50	92	97	121
herlands	Tons	6,354	8,507	7,464	8,124	7,890	7,672	7,726	3,210
	£'000	317	469	437	484	453	446	464	236
way	Tons	498	370	197	299	613	524	647	334
	£'000	21	19	11	20	34	33	43	28
den	Tons	1,053	1,225	1,168	1,902	2,522	1,559	1,682	1,551
	£'000	54	67	64	115	135	89	90	105
tzerland	Tons	1,529	842	316	138	121	81	85	-
	£'000	74	39	23	9	6	6	5	-
ted Kingdom	Tons	1,913	4,236	1,083	1,105	1,115	645	1,263	218
	£'000	81	175	66	68	55	39	65	17
er Countries	Tons	538	1,035	936	667	631	863	1,707	905
	£'000	29	41	48	34	30	41	82	61

- Nil or negligible

Source: Bureau of the Census Report FT 410, Department of Commerce

Exports from Republic of South Africa

		1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	1 (
TOTAL	Tons	10,823	17,416	29,587	31,983	34,182	47,094	46,743	56
	£'000	672	847	1,162	1,699	1,836	1,889	2,308	2
of which to:-									
Canada	Tons	-	-	-	-	-	281	430	.
	£'000	-	-	-	-	-	8	11	.
Belgium	Tons	29	194	465	370	-	-	404	.
	£'000	1	6	20	21	-	-	24	.
Denmark	Tons	18	105	81	92	118	257	134	.
	£'000	1	4	4	6	7	13	6	.
Finland	Tons	168	125	177	151	220	344	297	.
	£'000	10	6	9	8	12	14	14	.
France	Tons	-	523	1,431	4,867	5,182	6,556	7,334	.
	£'000	-	20	89	254	287	282	312	.
Germany	Tons	32	817	1,219	4,335	5,364	11,105	10,890	.
	£'000	3	37	64	218	296	491	560	.
Italy	Tons	-	-	-	-	-	-	1,084	.
	£'000	-	-	-	-	-	-	59	.
Netherlands	Tons	9	380	510	212	-	164	-	.
	£'000	-	13	16	9	-	8	-	.
Norway	Tons	6	75	177	-	184	250	172	.
	£'000	-	2	6	-	10	9	9	.
Sweden	Tons	53	293	173	149	198	238	-	.
	£'000	2	10	8	6	12	9	-	.
Switzerland	Tons	51	185	516	613	335	755	884	.
	£'000	3	9	28	36	22	37	52	.
United Kingdom	Tons	10,311	14,540	15,709	20,907	21,899	26,679	24,019	.
	£'000	643	730	910	1,128	1,161	995	1,203	.
Other Countries	Tons	146	179	129	287	682	465	1,095	.
	£'000	9	10	8	13	29	23	58	.

- Nil or negligible ... Information not available

(a) From December summary

Source: Foreign Trade Statistics, Department of Customs and Excise

FRESH GRAPEFRUIT

TABLE V

Exports from Cyprus

		1962	1963	1964	1965	1966	1967	1968 (a)
TOTAL	Tons	9,580	12,590	15,810	24,822	19,674	32,300	32,735
	£'000	306.0	441.1	526.1	920.1	860.2	1,451.6	1,486.1
of which to:-								
United Kingdom	Tons	7,510	9,380	11,000	14,571	10,496	15,803	17,268
	£'000	247.8	351.4	378.4	529.2	471.7	776.1	812.7
West Germany	Tons	800	1,220	2,020	3,386	3,089	9,460	8,548
	£'000	18.2	30.3	54.1	115.5	124.9	376.9	364.4
France	Tons	510	960	700	1,089	1,374	559	773
	£'000	13.3	24.7	27.6	48.0	65.1	29.5	36.4
Czechoslovakia	Tons	460	160	670	3,020	1,967	1,465	819
	£'000	16.9	4.1	19.8	118.7	75.7	67.6	39.0
Denmark	Tons	10	40	90	177	122	75	-
	£'000	0.2	1.0	2.3	7.7	6.5	4.0	-
Netherlands	Tons	-	-	80	567	638	1,329	2,269
	£'000	-	-	2.7	18.9	25.1	50.7	100.9
Switzerland	Tons	60	20	210	863	383	655	1,186
	£'000	0.9	0.2	5.2	30.6	17.0	28.4	48.4
Belgium	Tons	-	-	-	38	94	239	212
	£'000	-	-	-	2.0	5.0	12.5	10.5
Italy	Tons	-	-	60	-	38	94	487
	£'000	-	-	2.1	-	1.4	3.2	18.0
East Germany	Tons	-	-	-	608	932	1,020	-
	£'000	-	-	-	28.0	44.6	39.8	-
Finland	Tons	-	-	-	-	-	-	179
	£'000	-	-	-	-	-	-	7.4
Other Countries	Tons	230	810	940	503	541	1,601	1,014
	£'000	8.7	29.4	33.1	21.5	23.2	62.9	48.4

Not separately shown before 1962

(a) Provisional
- Nil or negligible

Source: Statistics of Imports and Exports
Ministry of Finance

Imports into the United Kingdom

		1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	1
TOTAL	Tons	45,590	60,441	56,822	72,462	71,075	75,382	79,801	91
	£'000	3,168	3,860	3,975	4,604	4,453	4,908	5,618	6
of which from:-									
Israel	Tons	16,009	16,897	16,743	25,196	22,028	29,465	27,590	41
	£'000	1,069	1,043	1,157	1,552	1,334	2,084	1,749	2
South Africa	Tons	9,688	13,657	15,073	20,192	19,629	17,027	17,393	18
	£'000	822	975	1,170	1,452	1,440	1,141	1,442	1
Cyprus	Tons	5,309	7,307	7,801	10,102	15,780	11,377	14,562	16,
	£'000	306	394	443	506	787	602	807	
Swaziland	Tons	-	-	596	1,239	1,797	4,234	5,724	5,
	£'000	-	-	51	87	98	260	503	
Mozambique	Tons	1,045	1,610	1,208	1,855	1,843	2,192	3,894	1,
	£'000	78	108	103	120	145	148	325	
Windward Is.	Tons	) (	724	676	1,136	1,203	1,380	1,877	1,
	£'000	) (	46	25	42	43	48	70	
		) (							
Jamaica	Tons	) 6,557(	1,700	2,563	1,512	1,988	1,095	1,724	
	£'000	) 406(	110	185	117	164	105	187	
		) (							
Trinidad	Tons	) (	6,628	4,389	2,947	2,296	4,226	2,035	1,
	£'000	) (	397	262	170	110	174	97	
British Honduras	Tons	396	938	1,096	1,126	-	-	-	-
	£'000	26	74	88	72	-	-	-	-
Brazil	Tons	593	1,266	1,964	1,433	672	130	118	
	£'000	40	83	148	102	47	9	10	
Spain	Tons	701	747	914	848	738	1,102	802	1,
	£'000	48	54	64	53	54	89	70	
Morocco	Tons	12	1,811	1,245	1,157	407	923	1,055	
	£'000	1	125	91	76	35	84	105	
United States	Tons	2,151	4,276	789	1,291	1,044	533	1,446	
	£'000	146	267	65	101	75	48	115	
Other Countries	Tons	3,129	2,880	1,765	2,428	1,650	1,698	1,581	
	£'000	226	184	123	154	121	116	138	

- Nil or negligible

Source: The Trade of the United Kingdom, H.M. Customs and Excise

Imports Into Canada

TABLE VII

		1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	1968
TOTAL	Tons	59,738	66,818	49,733	54,254	66,735	63,283	80,921	68,497
of which from:-	£'000	2,072	2,118	2,421	2,682	2,675	2,765	3,107	4,196
Hong Kong	Tons	10	11	13	10	7	5	18	29
	£'000	1	1	1	1	1	-	1	3
South Africa	Tons	-	27	-	90	292	413	521	1,139
	£'000	-	1	-	4	14	14	37	65
Brazil	Tons	-	-	-	-	38	-	-	152
	£'000	-	-	-	-	-	-	-	5
Cuba	Tons	56	61	-	1,393	285	327	214	242
	£'000	3	3	-	59	11	13	17	13
Honduras	Tons	595	638	79	-	-	-	-	-
	£'000	28	24	3	-	-	-	-	-
Jamaica	Tons	3	8	44	53	34	14	37	28
	£'000	-	-	3	3	3	1	3	3
Mexico	Tons	8	5	43	213	46	85	-	503
	£'000	-	-	2	11	1	4	-	41
United States	Tons	59,038	66,051	49,554	52,490	66,033	62,438	80,130	66,403
	£'000	2,038	2,087	2,412	2,604	2,645	2,733	3,057	4,064
Other Countries	Tons	35	17	-	5	-	1	1	1
	£'000	2	2	-	-	-	-	2	2

Source:- TRADE OF CANADA
DOMINION BUREAU OF STATISTICS

- Nil or negligible

TABLE VI

Grapefruit

Imports into the German Federal Republic

		1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967
TOTAL	Tons	19,051	25,275	34,271	40,810	49,385	59,743	61,792
of which from:-	£'000	1,205	1,532	2,246	2,535	3,069	3,571	3,784
Israel	Tons	6,919	9,370	15,757	16,251	22,306	29,366	30,710
	£'000	413	537	971	940	1,287	1,657	1,737
United States	Tons	8,013	7,377	5,330	6,026	5,782	4,564	3,881
	£'000	510	490	412	443	392	302	264
South Africa	Tons	86	1,219	2,070	4,355	5,944	9,605	11,176
	£'000	7	86	160	349	459	730	957
Cyprus	Tons	137	443	752	2,182	3,063	5,173	7,486
	£'000	9	23	38	112	147	247	348
Honduras Republic	Tons	164	465	995	2,880	3,477	3,763	2,446
	£'000	13	25	65	158	217	201	135
Spain	Tons	1,262	992	1,481	1,511	1,670	1,162	1,382
	£'000	100	61	91	103	132	88	74
Morocco	Tons	607	1,503	1,840	3,405	1,968	1,961	837
	£'000	49	80	102	179	110	108	39
Algeria	Tons	164	1,182	1,173	506	857	320	581
	£'000	18	85	83	32	50	22	40
Brazil	Tons	81	329	1,653	787	1,170	853	812
	£'000	5	21	145	55	90	49	50
Paraguay	Tons	51	10	151	333	895	439	-
	£'000	3	-	11	23	67	22	-
Jamaica, Trinidad etc	Tons	405	871	1,264	839	611	793	1,638
	£'000	22	48	70	49	31	41	83
Surinam	Tons	277	103	273	146	62	54	142
	£'000	17	5	17	8	3	3	10
Cuba	Tons	66	-	-	-	-	-	189
	£'000	4	-	-	-	-	-	11
Other Countries	Tons	819	1,411	1,532	1,589	1,580	1,690	512
	£'000	35	71	81	84	84	101	36

- Nil or negligible

Source:- Aussenhandel, Statistisches Bundesamt.

Grapefruit

TABLE IX

Imports into France

		1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	1968
OTAL	Tons	17,250	21,760	26,577	33,002	36,849	40,466	46,378	53,125
hich from:-	£'000	1,026	1,194	1,731	2,081	2,254	2,725	3,389	4,007
el	Tons	7,138	8,352	11,100	15,163	18,800	20,898	23,276	36,760
	£'000	388	411	605	816	993	1,246	1,556	2,565
ed States	Tons	474	5,329	6,328	7,659	7,366	8,952	9,946	4,799
	£'000	28	365	530	595	518	714	847	506
h Africa	Tons	-	454	2,053	4,580	5,045	4,471	6,609	4,730
	£'000	-	27	165	347	410	372	514	355
cco	Tons	5,114	3,672	2,085	1,274	1,453	1,245	2,330	898
	£'000	297	174	119	70	79	67	151	52
ria	Tons	2,786	2,649	1,900	1,877	1,431	1,049	1,198	443
	£'000	184	137	121	105	83	56	79	26
us	Tons	-	-	1,024	645	1,191	1,012	857	825
	£'000	-	-	48	31	54	51	46	50
n	Tons	-	-	221	302	396	605	427	570
	£'000	-	-	13	15	24	50	35	54
t	Tons	-	-	-	-	-	-	-	1,153
	£'000	-	-	-	-	-	-	-	98
duras Rep.	Tons	-	-	263	716	481	547	345	883
	£'000	-	-	17	42	41	46	29	78
inam	Tons	135	154	347	202	232	277	368	727
	£'000	13	12	29	20	25	28	38	101
mbique	Tons	954	404	527	89	-	1,024	-	-
	£'000	69	24	35	6	-	77	-	-
a	Tons	-	-	-	-	-	-	547	262
	£'000	-	-	-	-	-	-	57	32
tralia	Tons	-	-	-	-	-	-	96	74
	£'000	-	-	-	-	-	-	9	8
er Countries	Tons	649	746	729	495	454	386	379	1,001
	£'000	47	44	6	34	27	18	28	82

- Nil or negligible

Source:- Commerce Exterieur, Direction Générale des Douanes et Droits Indirects

Grapefruit

TABLE X

Imports into the Netherlands

		1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	
TOTAL	Tons	4,733	7,687	9,704	11,099	12,120	11,862	15,412	2
of which from:	£'000	226	350	488	543	614	628	941	1
Israel	Tons	1,227	1,539	2,586	5,061	4,811	4,382	6,567	11
	£'000	63	71	144	229	218	233	364	
United States	Tons	2,032	2,863	2,266	2,349	2,679	2,898	3,290	2
	£'000	103	139	129	142	165	175	241	
Surinam	Tons	1,084	1,634	2,010	1,169	1,948	1,825	1,995	2
	£'000	41	67	94	51	97	97	112	
Honduras	Tons	-	12	280	436	532	1,025	246	1
	£'000	-	-	12	14	25	37	13	
Brazil	Tons	20	203	175	194	352	204	295	
	£'000	-	7	10	5	12	5	15	
Paraguay	Tons	-	13	-	-	346	222	554	
	£'000	-	-	-	-	21	8	34	
South Africa	Tons	-	213	312	280	156	145	105	
	£'000	-	10	15	15	8	11	7	
Cyprus	Tons	12	-	-	18	312	120	325	
	£'000	-	-	-	1	13	4	13	
Spain	Tons	17	50	46	127	66	266	233	
	£'000	1	2	2	6	3	14	17	
Morocco	Tons	16	223	712	212	47	-	175	
	£'000	-	9	19	10	2	-	18	
Cuba	Tons	-	-	-	-	-	-	-	
	£'000	-	-	-	-	-	-	-	
Belgium	Tons	185	280	532	611	384	374	1,216	
	£'000	10	14	32	41	26	25	87	
Other Countries	Tons	140	657	785	642	487	401	411	
	£'000	8	31	31	29	24	19	20	

- Nil or negligible

Source:- Maandstatistiek van de In-Uit-Voer, Centraal Bureau voor de Statistiek

GRAPEFRUIT — Imports Into Belgium - Luxembourg — TABLE XI

		1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	1968
TOTAL	Tons	6,215	5,980	6,580	8,593	9,381	9,686	11,111	11,877
of which from:-	£'000	323	297	346	439	480	520	643	710
Netherlands	Tons	699	543	373	555	575	-	-	-
	£'000	39	27	23	28	29	-	-	-
Israel	Tons	2,624	2,971	3,340	4,813	5,991	6,909	7,306	8,723
	£'000	127	140	160	237	286	356	381	519
South Africa	Tons	-	-	382	-	-	-	-	-
	£'000	-	-	23	-	-	-	-	-
United States	Tons	2,595	2,027	1,949	2,491	2,231	2,335	2,753	-
	£'000	141	107	111	134	131	138	193	-
Other Countries	Tons	297	439	536	734	584	442	1,052	3,154
	£'000	16	23	29	40	34	26	69	191

Source:- Commerce Exterieur
L'Institut National de Statistique

- Nil or negligible

GRAPEFRUIT

Imports Into Switzerland

TABLE XII

		1960-62 Average	1963	1964	1965	1966	1967	1968
TOTAL	Tons	6,603	7,042	8,279	7,464	7,681	9,856	9,023
of which from:-	£'000	402	461	532	519	519	672	641
Cyprus	Tons	32	28	103	736	634	588	1,028
	£'000	2	1	7	56	36	35	59
Italy	Tons	12	14	35	22	46	52	22
	£'000	-	1	2	1	3	3	2
Spain	Tons	196	174	151	161	121	191	102
	£'000	11	10	9	11	7	12	6
Israel	Tons	4,682	5,441	6,354	5,093	5,039	6,701	6,655
	£'000	262	317	375	306	315	403	462
Mozambique	Tons	46	37	14	-	8	13	76
	£'000	3	3	1	-	1	1	6
South Africa	Tons	309	570	656	423	644	1,075	825
	£'000	23	54	56	44	60	110	75
Brazil	Tons	13	40	-	81	77	168	34
	£'000	1	4	-	8	5	13	2
United States	Tons	1,218	643	842	914	1,058	1,038	276
	£'000	92	65	73	90	88	93	28
Other Countries	Tons	95	95	124	34	54	30	5
	£'000	8	6	9	3	4	2	1

Source:- Statistique de la Suisse

Bureau Federal de Statistique

Not separately shown before 1960

GRAPEFRUIT — Imports Into Italy — TABLE XIII

		1957-59 Average	1960-62 Average	1963	1964	1965	1966	1967	1968 (a)
TOTAL	Tons	154	269	313	686	1,558	3,361	4,891	6,499
of which from:-	£'000	8	14	16	44	98	229	353	432
France	Tons	-	-	-	-	-	-	63	177
	£'000	-	-	-	-	-	-	7	12
Netherlands	Tons	-	-	-	48	55	97	-	-
	£'000	-	-	-	5	5	7	-	-
Israel	Tons	-	-	-	323	1,108	2,866	3,298	5,368
	£'000	-	-	-	21	67	198	218	354
Somalia	Tons	152	193	243	176	286	214	161	-
	£'000	8	10	13	8	18	10	8	-
South Africa	Tons	-	-	-	-	-	123	1,247	-
	£'000	-	-	-	-	-	10	113	-
Venezuela	Tons	-	-	-	28	82	59	118	-
	£'000	-	-	-	2	6	4	7	-
Other Countries	Tons	2	76	70	111	27	2	4	954
	£'000	-	4	3	8	2	-	-	66

Source:- Comercio Con L'Estero
Instituto Centrale Di Statistica

- Nil or negligible

(a) from December summary

APPENDIX E

Method of Projection of Consumption of Fresh Grapefruit to 1975 based on observations in 1960 to 1968 inclusive

Prepared by R Pope of the Statistics Section, TPI

Consumption of fresh grapefruit has risen in the period of observation, much faster than can be explained by normal population increases in the consuming countries.

In addition to the apparent year to year increase, there is a tendency for impc and consumption to be greater in years of good supply and low prices, than in years of short supply and high prices.

In the first stage an attempt is made to eliminate the fluctuations caused by variations in price. For each importing country, the average import price is deflated by the general consumer price index in each year for comparability. Consumption figures are expressed in lbs. per caput. A linear multiple regression equation of the form:-

$$y_1 = a + b_1 x_1 + b_2 x_2$$

is obtained by the Principle of Least Squares.

y_1 = per caput consumption in lbs.

x_1 = the number of the year, counting 1964 as zero.

x_2 = the deflated average price of imports of fresh grapefruit, in national currency units.

The constants a, b_1 and b_2 are estimated from the data, and are the best possi in the sense that the sum of the squares of the differences between the observe values of y_1, and those predicted by the equation, is the least possible.

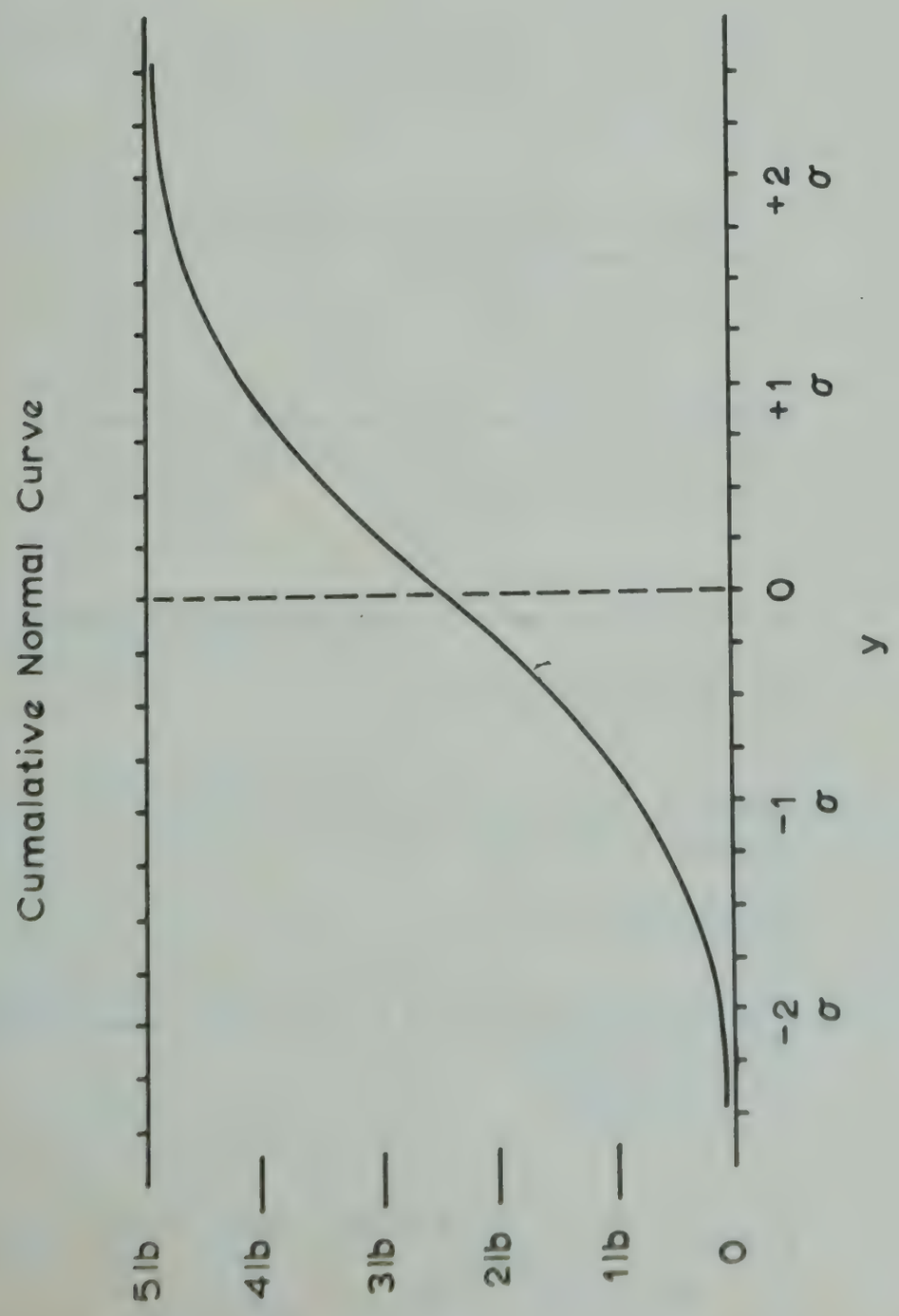
From the coefficient b_2 corrections are obtained, to give estimates of what per caput consumption in each year would have been, if the deflated price had been constant throughout the period.

In the second stage, it is assumed that the per caput consumption is moving fr one level, taken as a convenient figure a little below the 1960 estimate, to a new higher level about which it will eventually settle. The model used is the sigmoid or Cumulative Normal curve, which has a rather exotic formula but a very simple form as shown in the diagram. The proportion of the difference between levels is expressed in terms of the distance along the base line.

For comparability between countries, the upper level has been so chosen, that in each case the projection for ten years after the end of the base period, that is to 1978, results in an estimate of 90% of the total increase. That is, if the original level is 1 lb and the upper level 2 lb, the 1978 estimate should be 1.9 lb.

Projections of population to 1975 are then used to estimate total consumption from the per caput figures. The average of 1960 to 1968 deflated prices is assumed to be normal.

In most cases, prices of fresh grapefruit have been rising less rapidly than has the consumer price index, so that in real terms grapefruit was cheaper in 1966 to 1968 than in 1960 to 1962. There is an opposite trend in Canada, and no significant trend in France or Italy. In all other consuming countries, prices towards the end of the base period are in real terms significantly less than the 1960 to 1968 average. If they remain so, the consumption figures are likely to be higher than estimated.



INFORMATION ON TRADE CONTACTS

The firms and organisations contacted in the course of this study are listed below. There are other importers of grapefruit, especially on the Continent; potential exporters are advised to contact the national trade federations for names of other importers.

NATIONAL TRADE FEDERATIONS:-

Belgium	:	Fédération Nationale des Importateurs, Exportateurs et Grossistes en Fruits, Légumes et Primeurs 68 Boulevard d'Ypres Brussels 1
Canada	:	Canadian Fruit Wholesalers' Association 219 Queen Street Ottawa 4
France	:	Chambre Syndicale d'Importation et de Distribution de Fruits et Légumes C.S.I.D. 55 Rue de Rivoli Paris 1
Germany	:	Zentralverband des Deutschen Fruchte-Import und-Grosshandels eV Von Groote Strasse 7 Koln-Marienburg
Italy	:	Sindicato Nazionale Esportatori Importatori Ortofrutticoli e Agrumari Piazza G.G. Belli 2 Roma
Netherlands	:	Dutch Federation of the Fruit and Vegetable Import Trade Bezuidenhoutseweg 82 The Hague
Switzerland	:	Schweizerischer Obsteverband Baarerstrasse 88 Zug Switzerland
United Kingdom	:	National Federation of Fruit and Potato Trades Ltd Russell Chambers Covent Garden London WC2
United States	:	United Fresh Fruit and Vegetable Association 827 Wyatt Building 777, 14th Street, N.W. Washington D.C. 20005

FIRMS AND ORGANISATIONS CONTACTED BY TPI

Inclusion in this list does not imply that TPI has any knowledge of the financial standing of the firms.

Cowling (Wholesale Fruit Merchants) Ltd
Wholesale Markets
Pontefract Lane
Leeds

Connolly Shaw (Anderson) Ltd
Liverpool Fruit Exchange
10-18 Victoria Street
Liverpool 2

Fyffes Group
15 Stratton Street
London

Geest Industries Ltd
White House Chambers
Spalding
Lincolnshire

Gillespie Bros & Co
Ling House
Dominion Street
London EC2

R E Jenkinson Ltd
35 King Street
London WC2

Walter Lund Ltd
Wholesale Fruit Market
Leeds

Geo Monro (Produce) Ltd
43 King Street
Covent Garden

Francis Nicholls (Northern) Ltd
89/97 Wholesale Market
Liverpool

T J Poupart Ltd
107/115 Long Acre
London WC2

Prime Fruit Importers
15 Victoria Street
Liverpool 2

Louis Reece Ltd
69/73 Brushfield Street
London E1

Ridley & Houlding Ltd
10 Russell Street
London WC2

J Sainsbury
Stamford House
Stamford Street
London SE1

Saphir Sons & Co Ltd
London Fruit Exchange
London E1

J O Sims Ltd
Borough Market
London SE1

J M Turnell
17 New Row
London WC2

Dan Wuille & Co Ltd
100/104 Long Acre
London WC2

Citrus Marketing Board of Israel
Wellington House
Upper St Martin's Lane
London WC2

Italian Institute for Foreign Trade
31 Old Burlington Street
London W1

The Outspan Organisation
6 Henrietta Street
London WC2

Afrikanische Frucht-Compagnie Laeisz & Co
Trostbrücke 1
Postfach 2304
2 Hamburg 11
West Germany

A.S.K. Centrallen AB
Rannerbanan 12
252 30 Halsingborg
Sweden

Compagnie des Bananes
23 Rue Auguste Vaequerie
Paris 16
France

Compagnie Fruitiere
33 Boulevard F. de Lesseps
13 Marseille 14
France

Albert Heijn
Zaandam
26 Westzijde
Amsterdam
Holland

Kooperativa Förbundet
Fack, S-104 65
Stockholm 15
Sweden

Moller & Co AB
23-25 Importorvägen
S-12173 Johanneshov
Stockholm
Sweden

Albert Nataf
52 Cours Julian
Marseille
France

Société Cofa
17 Rue Turbigo
Paris 1
France

Société Pomona
1c, Rue de Toulouse
M.I.N. de Paris - Rungis
94 - Rungis
France

Ets S. Tedesco et Cie
170 Cours Charlemagne
Lyon 2
France

Velleman en Tas N.V.
Fruit Exchange
Rotterdam
Holland

Waco
110 Boulevard des Dames
Marseille
France